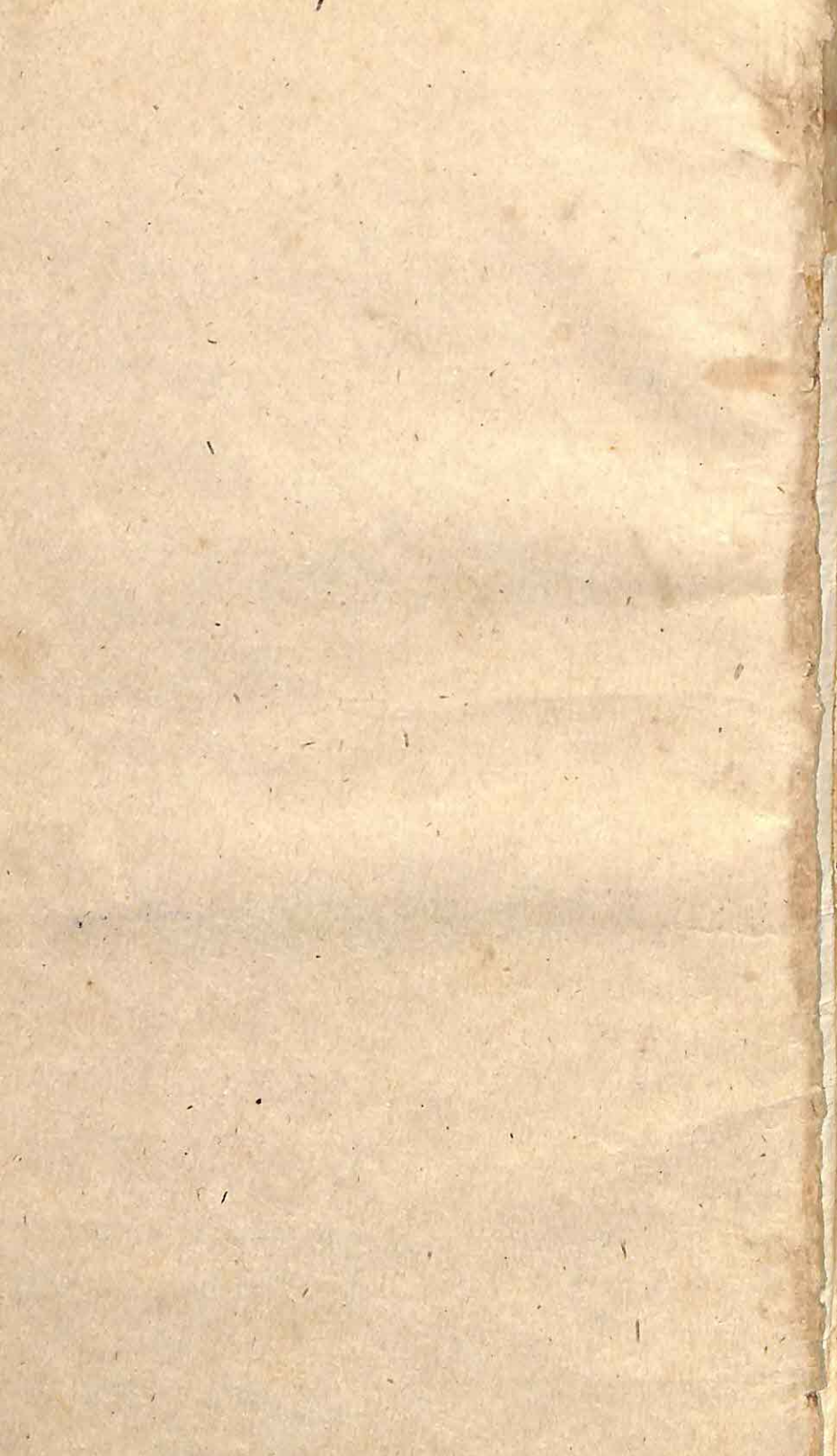


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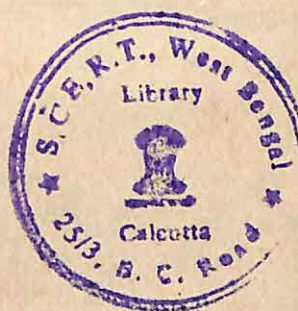
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SCHOOL GUIDANCE AND MENTAL MEASUREMENT

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PREFACE

The guidance programme aims at ascertaining children's capacities and abilities as well as how they can be developed to their fullest extent. It also helps the young people to live happily achieving success in life. The guidance work is, therefore, concerned with every aspect of an individual's personality extending over his whole life. It is based on the data supplied by a few behavioural sciences, and modern theories and practices resulting from current educational movements. These have contributed much to make the guidance programme an important accessory to a country's education.

In our country guidance movement was started only a few years ago. But it is fast getting popular. Educational and Vocational Guidance Bureaus have been established in almost all the Indian States for introducing guidance programme in their respective areas. Very recently different Indian Universities have introduced Educational and Vocational Guidance as a subject in their Teachers' Training Courses.

This book has been designed primarily for teacher trainees, secondary school teachers, career masters and parents. Special efforts have been made to make the book interesting and understandable without jeopardising the basic concepts. The style of the book is direct and attempts have been made to explain some major questions, such as, history and trends of guidance movement, concepts of guidance, need for guidance, basic data to be collected, how to use these data, principles and techniques of guidance in a very clear way.

The descriptions of a few standardised Psychological tests and the methods to be followed for the construction and standardisation of objective type of tests have also been given in this book. These materials will perhaps be found very useful by the students of Educational and Vocational Guidance as well as by the students of Educational and Mental Measurement.

Students of the Educational and Mental Measurement will get an understanding of the concepts of standardised tests, their reliabilities, validities and their role in constructing tests. They will be able to get a fair idea about the construction, administration, scoring and interpretation of standardised Psychological tests.

The author thankfully acknowledges the contributions of his friends, colleagues and students who helped and encouraged him to write this book. The author is indebted to the authors of all the texts and articles on guidance which he had to read in writing this book.

The author is specially indebted to Shri G. Bhattacharyya B. A. (Hons.), B. T., former General Secretary of the West Bengal Government School Teachers' Association, for going through the book and for providing many valuable suggestions for its improvement.

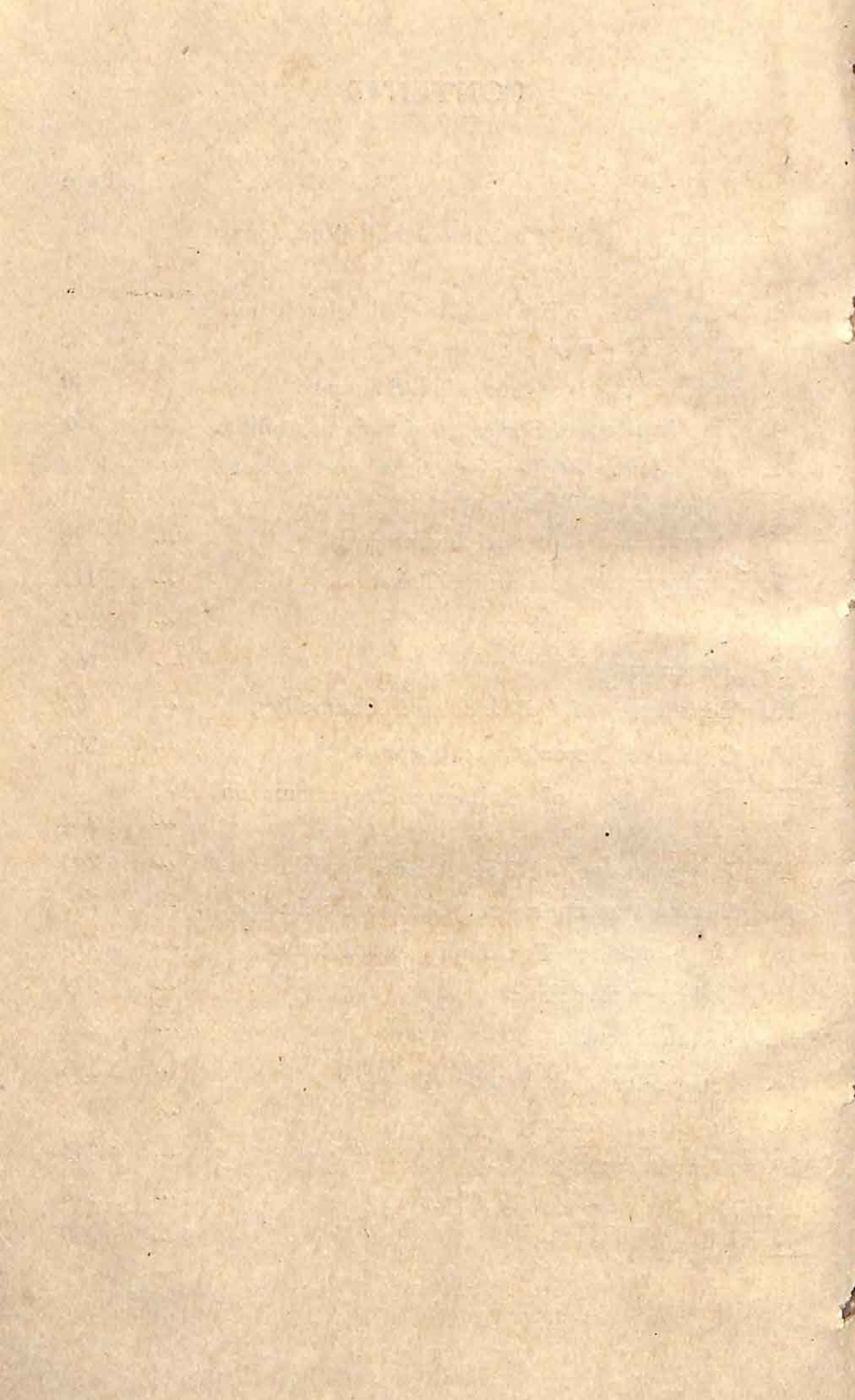
The author will be highly encouraged if this book is found useful by all teachers, careermasters, students and parents.

March, 1970

H. C. Basu

CONTENTS

	Page
Preface	
1. Basic Idea of Educational and Vocational Guidance ...	1
2. The Necessity for Guidance Service in our Country ...	22
3. Basic Data Necessary for Guidance ...	40
4. Intelligence and Structure of Human Abilities ...	51
5. Individual Intelligence Tests and Group Tests of Intelligence ...	61
6. Interest and Interest Inventories ...	98
7. Aptitude and Aptitude Tests ...	113
8. Occupational Information ...	135
9. Placement ...	165
10. Techniques of Guidance and Counselling ...	182
11. Guidance Records and Reports ...	207
12. Organisation of Guidance Programme in Schools ...	222
13. Interpretation of Test Results ...	243
14. Testing Programme and Guidance Schedule ...	259
15. Questionnaires For Pupils and Parents ...	270
16. Guidance Schedule ...	279
17. Measurement of Achievement ...	286
18. Personality and Personality Tests ...	298
19. Projective Techniques ...	332
20. Mental Testing ...	344
21. Hobbies and Hobby Clubs ...	378
22. Bibliography ...	388



CHAPTER I

BASIC IDEA OF EDUCATIONAL AND VOCATIONAL GUIDANCE

Early history of guidance Movement—Guidance Movement in India—Meaning of the Term Guidance—Vocational Guidance—Vocational Guidance and Vocational Education—Vocational Education in the family and in the Society—Educational Guidance—Guidance and Education—Difficulties of Guidance Programme.

Expansion of the field of knowledge and dissemination of knowledge are the two goals which all educators of former days were concerned with. All children were expected to acquire a definite amount of knowledge whatever might be their age, abilities and aptitude. But in recent years ideas are changing rapidly owing to ever increasing social complexities and industrial developments. Modern educators are in favour of imparting education according to the age, abilities and aptitude of the educand. Teachers are to deal with a heterogeneous group of students. In every class there will be students having varied intelligence, abilities, aptitudes, objectives, interests and purposes. As there are individual differences one of the aims of education should be to promote the proper intellectual development of all children in proportion to their respective innate abilities. Therefore no single or uniform pattern of educational system can serve the real purpose of all children. Modern educationists think that a comprehensive educational programme will be able to cater to the needs of all children, whatever may be the levels of their abilities, intelligence, achievements, mental, physical and social conditions.

French, Hull and Dodds¹ (1951) have suggested four major functions of Secondary Education. Those functions may be stated in the following words.

1. Will French—American High School Administration. New York. Rinehart & Co. 1951. pp. 82 - 84.

(a) "The integrative function for the cultural integration of students" which will enable them to live as a good citizen or as a peaceful member of the society.

(b) "The developmental function" which is necessary for the proper development of the unique qualities of each pupil in order to enable him to attain self-adjustment and personal happiness.

(c) "The exploratory and guidance function." This will enable the pupil to ascertain his own assets and to choose a course of study which will be best suited to his own abilities, aptitudes and interests.

(d) "The differentiating functions." Ideas about the theory of education are changing so it has become necessary to make provisions for diversified courses of studies which may cater to the needs of different types of pupils possessing varied abilities. In the new system of education there will be a common course upto a certain grade and after that there will be some elective subjects in order to fulfil the demands of all types of pupils.

A pupil will have to select a course of study and to choose a vocation which will be most suited to his abilities and interests. Such selections should desirably be correct as far as possible. Again the selection of the course of study should be beneficial both to the individual pupil and to the society. While choosing courses of studies and future vocations pupils need some sort of guidance and help from some experts or experienced persons.

The very idea of organised guidance programme occurred in the minds of the American educationists for the first time by the end of the nineteenth century. According to some scholars the guidance programme was initiated for the first time by J. B. Davis in Michigan schools in 1898. (Mathewson₁)

Brewer₂ and a few other scholars claimed that in America the guidance movement was first initiated in Boston in the beginning of the 20th Century.

1. R. H. Mathewson—Guidance Policy and Practice. New York, Harper & Row, 1962. p. 72.
2. J. M. Brewer—History of Vocational Guidance, New York. Harper Brothers, 1942.

In most of the books on guidance it has been stated that in 1908, Frank Parsons established the Vocational Bureau at Boston in order to assist youngmen in securing jobs. One Mrs. Q. A. Shaw did some work in this field under the guidance of Frank Parsons, the then Director of the Civil Service House, Boston₁.

Parsons published a book on guidance in 1909, in which he has described the history, aims and scopes, and methods of guidance programmes. In his book he has said many things about the notion and importance of vocational guidance.

The term Educational Guidance appeared for the first time in the "Reader's Guide", of April, 1912. T. L. Kelley, published in 1914, his doctorate thesis entitled "Educational Guidance" and showed that there are some differences between educational guidance and vocational guidance₂. Kelley wanted to find out a scientific method of classifying students of different abilities and capacities. He thought that educational guidance means the determination of the abilities of pupils and assistance rendered to them in choosing courses of studies.

The idea of "moral guidance" appeared for the first time in a paper entitled "Vocational and Moral Guidance through English Composition" presented before the National Education Association by J. B. Davis in 1912.

At the present moment we are aware of other types of guidance programmes, such as, Health, Civic, Social, Religious, Recreational and Leadership also. It seems that the adjective vocational was added to the word guidance first. All subsequent guidance programmes have developed from the idea of vocational guidance. In his book Frank Parsons described guidance in terms of vocational guidance. According to him vocational guidance consists in guiding the pupil in "the choice of vocation, adequate preparation for it, and the attainment of efficiency and success." The decision or choice

1. F. J. Allen—Principles and Problems of Vocational Guidance. p. 5. New York. McGraw - Hill Book Company. INC, 1927.
2. Trueman L. Kelley—Educational Guidance. p. 4. Teachers' College, Columbia University, 1914.

is to be made by the pupil himself but he is to be helped by the guidance officer in the following three things :—

(a) The understanding of self abilities, aptitudes, intelligence, interest etc.

(b) In getting proper information regarding avenues of employment and requirements of different types of occupations.

(c) In selecting an occupation, entering into it and preparing himself for it.

In 1913 an association called as National Vocational Guidance Association was established at Grand Rapids, Michigan. This association published its Vocational Guidance Bulletin in 1915. The name of this bulletin was changed several times. The name was changed from the 'Vocational Guidance Bulletin' to 'Vocational Guidance Magazine and Occupation', which later on appeared under the name 'Vocational Guidance Journal'. In 1952 this National Vocational Guidance Association merged with other personnel organisations and began to publish a new journal 'Vocational Guidance Quarterly'.

Another national guidance organisation of America is known as the American Personnel and Guidance Association or A. P. G. A. The official publication of the A. P. G. A comes out 10 times a year and is known as the "Personnel and Guidance Journal."

Boys' High School of Brooklyn, New York, introduced vocational guidance service very early. Vocational guidance service was introduced in several schools at Cincinnati & Ohio in 1913. Vocational Guidance Bureaux and departments were gradually established in Chicago, at Minneapolis, Omaha, Scattle and in many other places.

Traxler said that there are at least five sources which contributed to the development of the guidance movement₁.

1. "Philanthropy and humanitarianism." Many philanthropists and humanitarians thought that in order to improve the social condition of the country it is necessary to increase the efficiency of the persons engaged in different

1. Arthur E. Traxler, *Techniques of Guidance*. rev. ed. New York: Harper and Row, 1957, pp. 3-4.

vocations. This could be done by guiding in the right directions inefficient and maladjusted persons engaged in different vocations.

2. "Religion." Religious minded men think that there are good and evil forces in this world. All youngmen's character should be good before every thing else and they should be free from the influence of evil forces. Character training is, therefore, necessary for the benefit of the individual pupil and of the society.

3. "Social Change." Social conditions are changing every moment. Along with the technological advances environmental conditions are becoming more and more complex. In order to meet the necessities and demands of the changing world some sort of vocational guidance should be given to young boys and girls.

4. "Mental Hygiene." Owing to increasing complexities of life the number of maladjusted persons are also increasing. If cases of maladjustment increase at such a rate the society will be full of maladjusted persons and that is definitely bad for it. Mental hygienists began to think about the introduction of some sort of mental therapy or preventive programmes for mental disorders. So they recommended to introduce guidance service.

5. "The movement to know pupils as individuals." Psychological testing and mental measurement facilitated the guidance movement. During the early part of the twentieth century a good number of Psychologists engaged themselves in the construction and standardisation of Psychological tests for measuring mental traits.

The idea of Guidance Service has gained ground in India during the last twenty years. India is experiencing exactly the same difficulties and complexities as are being felt in other countries of the world. In these days of ever increasing economic and social complexities Indian educationists and national leaders are also facing many troublesome problems in drawing up educational plans and programmes for the whole country. Tremendous increase in population, heavy pressure on available arable land, rapid industrial development on the one

hand and economic inflation and growing unemployment on the other hand are causing terrible headache to our national leaders and social reformers. The number of educated youngmen without employment and underpaid workers and officers is increasing at a rapid rate. If things go on this way, all our developmental schemes and future planning will be jeopardized in the course of next few years and all our high hopes will end in a fiasco. The employment market has become so over-competitive and shy that in many places even good honours graduates apply for posts which are marked for matriculates. In many factories and commercial undertakings many graduate engineers are doing work which can be well done by an overseer or by persons who come out of a trade school.

When the avenues of employment have apparently become so scarce our University students are badly feeling the necessity of some experts' guidance and help for getting settled in life. They need information about different courses of studies and multifarious avenues of employment. Some courses are very popular among the students and the guardians. So large number of students rush in for those courses while many seats remain vacant in other branches of studies. Large number of students crowd in a particular type of vocation while other vocations suffer from a dearth of qualified and duly trained personnel. Many students secure jobs through personal influence and acquaintance without their own assets and liabilities ever being scrutinised. In some cases again they may prove to be misfits and inefficient. In certain other cases they are found capable of doing jobs more responsible than what they are given to do, resulting in the wastage of efficiency and man power.

So Indian educationists, national leaders, parents and students feel the necessity of introducing Educational and Vocational Guidance Service in this country. Some of the Indian Universities started University Guidance Bureaux in order to supply necessary information about different courses of studies available in India and abroad and careers which our students may choose. Parents anxious for selecting right and paying occupations for their children very often visit

these Guidance Bureaux in search of vocations, for enlightenment and direction.

All pupils are not suitable for all courses of studies and careers. Abilities, capacities, aptitude, intelligence and interests of the pupils are to be ascertained before selecting proper courses and careers for them.

The Psychology Department of the University of Calcutta also took part in the Guidance movement of India. They opened a section for Vocational Guidance Service. This section was open to all and they charged a nominal fee for the services rendered. Different non-official and private organisations such as the Parsee Panchayet of Bombay, the Y. M. C. A., Ayar's Career Service, a few Psychologists trained either in the U. K. or in the U. S. A. helped the Educational and Vocational Guidance movement either by publishing papers and journals containing articles on educational and vocational guidance or by setting up private guidance laboratories. There are a few such private psychological laboratories in Calcutta too.

The first Bureau of Psychological Research was established by the Government of U. P., in Allahabad, in 1947. This Bureau prepared many psychological tests and trained many guidance personnel. The Government of West Bengal established the Bureau of Educational & Psychological Research in Calcutta in 1953 for constructing some Standardised Psychological Tests and to carry on research work in the field of Educational Psychology. A large number of psychological tests have since been prepared by this Bureau. All these Bureaux and laboratories were opened primarily for carrying on researches in the field of Education and Educational Psychology.

Emphasis on the utility of Educational and Vocational Guidance Service at school level was given by the Secondary Education Commission in 1954. This Secondary Education Commission recommended that our Government should introduce guidance service in our Higher Secondary Schools. Accordingly the Government of India established the Central Bureau of Educational and Vocational Guidance in Delhi in 1954. This

Central Bureau is now functioning as a branch of the N. C. E. R. T. This Central Bureau of Educational and Vocational Guidance has trained many guidance personnel from all parts of India. It has published several papers, journals, booklets and bulletins on guidance programme during the last few years. It is carrying on valuable researches in this field. The Ministry of Education, Government of India, has extended their financial help to all State Governments who would establish and run State Bureaux of Educational and Vocational Guidance. (The dates of establishment of some other State Bureaux are : Maharashtra—1950, M. P.—1955, Orissa—1955, Bihar—1956, Andhra Pradesh—1957, Assam—1957, Kerala—1958, Rajasthan—1958, Mysore—1959 and Gujrat—1960.)

The Secondary Education Commission (1954) recommended to extend the duration of the Secondary Education by one year and to establish Higher Secondary or Multipurpose Schools, having seven streams or courses of studies in order to cater to the needs of pupils of different abilities and aptitudes. So it has become necessary to introduce School Guidance Programme for giving the pupil all possible assistance for making a right selection from amongst these available streams.

An All India Seminar on Educational and Vocational Guidance was organised at the premises of the Central Institute of Education in Delhi in 1953. This Seminar was convened by the Central Institute of Education. A second Seminar was held at the same venue at the initiative of the same Institute of Education, in 1954. The third Seminar on Educational and Vocational Guidance was held at Baroda. In the last Seminar it was decided to organise an All India Association of Educational and Vocational Guidance.

The Government of India felt the necessity of introducing a common and scientific guidance service through out the length and breadth of the country. It was thought right that a uniform pattern of guidance programme should be followed in all states of India. With a view to this the Ministry of Education, Government of India, convened an All India Seminar on Educational and Vocational Guidance, in

Delhi, in 1956. The participants of this Seminar were the heads of Higher Secondary and Multipurpose Schools, Directors of State Educational and Vocational Guidance Bureaux and some educationists who are interested in the guidance service movement.

Meaning of the Term Guidance.

Youngmen and youngwomen face many personal, social, economic and vocational problems when they want to adjust themselves to their environmental situations. They require some advice and guidance from experienced persons in the process of personal adjustment and development. An improved type of education and well organised guidance service can help them much in this matter.

It is very difficult to define the term 'Guidance'. Guidance is above all a concept, which is concerned with the desired development of the individual pupil with the clear and definite intention of benefiting the individual pupil and the society to which he belongs. It may be regarded as a process as well as a concept. It intends to benefit both the individual pupil and the society. It is also a process. As a process guidance is concerned with the determination of the potentialities of the individual pupil and through the process of counselling and other techniques it intends to help the pupil to make his necessary adjustment to the environment, choose a course of study which is best suited to him and adopt a suitable vocation for leading a peaceful and fruitful life afterwards.

Koos and Kefauver₁ said that "the guidance concept is defined as having two main phases : (1) the distributive, and (2) the adjustive phases. The aim in the former phase is to distribute the youth as effectively as possible to education and Vocational opportunities, and in the latter to help the individual to make the optimal adjustment to these opportunities."

C. H. Threlkeld₂ said that "the function of guidance is

1. L. V. Koos and G. N. Kefauver—Guidance in Secondary Schools, New York, The Macmillan Company, 1932 p. 22.
2. C. H. Threlkeld—"The Guidance Function", California Journal of Secondary Education, March 1937, 12 : 135-136.

to guide pupils on the basis of exploratory and revealing courses and on the information gathered from personal studies, as wisely as possible into wholesome and worthwhile social relationships, maximum personality adjustment, and advanced study or vocations in which they are most likely to be successful and happy”.

A. E. Traxler₁ tried to explain the term guidance in the following way—“Guidance as defined by those who approach the problem rationally implies first of all recognition and understanding of the individual and creation of conditions that will enable each individual to develop his fullest capacities and ultimately to achieve the maximum possible self—guidance and security both economically and socially. This concept of guidance epitomizes our democratic philosophy. It is as enduring as democracy itself, for basically it is democracy applied to the life of the school.”

Cox, Duff and McNamara₂ states that—

(1) “Guidance consists in helping pupils to set up objectives that are for them dynamic, reasonable, and worth-while, and in helping them, so far as possible, to attain these objectives.

(2) The major fields in which guidance is necessary are health, vocation, avocation, education, and human relations.

(3) The idea of guidance is inherent in all efforts to education.

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(7) The major work of guidance must be done by class room and homeroom teacher.”

According to L. D. Crow and A. Crow₃ “Guidance is assistance made available by competent counsellors to an individual of any age to help him direct his own life”.

1. Arthur E. Traxler—Techniques of Guidance, New York, Harper & Bros. 1945.
2. Philip W. L. Cox, J. C. Duff, Marie McNamara—Basic Principles of Guidance, New York, Prentice Hall, INC, 1948.
3. L. D. Crow and Alice Crow—An Introduction to Guidance. New York, American Book Company, 1951.

Wiley and Andrew¹ tried to define guidance in the following words—"Through guidance the individual is assisted in making a wholesome, worth-while adjustment to his world. More specifically the individual must be given assistance in choosing dynamic, reasonable, and worth-while objectives, in formulating plans of action to accomplish these objectives, in meeting crises and solving problems which appear to be blocking plans, and sustaining personal enjoyment and in self-direction of his life so that goals may be efficiently achieved. There will be occasions during the guidance process where the individual will need help in discovery of needs, assets, opportunities, adjustment to other people, and adjustment to himself."

Vocational Guidance.

The term "guidance" came into prominence for the first time along with the adjective "Vocational". Different people tried to explain the term "Vocational Guidance" in different ways. Vocational guidance was regarded as "Getting a job for the child," "Fitting the occupation to the individual," or "Keeping the individual happy at his work." In course of time several other adjectives were added to the term guidance. They are educational guidance, health guidance, moral guidance, character guidance, social guidance, leadership guidance, recreational guidance and so on. Perhaps the term educational guidance appeared for the first time in the 'Reader's Guide' of April, 1912.

(In 1924, the National Vocational Guidance Association of America defined the term Vocational Guidance in the following way—"Vocational guidance is the giving of information, experience and advice in regard to choosing an occupation, preparing for it, entering it, and progressing in it." According to this definition the Vocational Guidance Counsellor or the Vocational Guidance Officer, is to do everything for the pupil. Many people were not satisfied with this definition. They thought that the pupil should be assisted to do himself the major portion of the work.

1. R. D. Wiley and D. C. Andrew—Modern Methods And Techniques in Guidance, Harper & Brothers, New York, 1955,

So the National Vocational Guidance Association had to revise its definition of Vocational Guidance several times. In 1937 the same Association defined Vocational guidance in the following way—"Vocational Guidance is the process of assisting the individual to choose an occupation, prepare for it, enter upon and progress in it. It is concerned primarily with helping individuals to make decisions and choices involved in planning a future and building career—decisions and choices necessary in effecting satisfactory vocational adjustment.¹"

There are two poles in the process of vocational guidance. At one pole there are the individuals possessing different levels of intelligence, physical characteristics, aptitudes, interests, personality traits, academic attainments and on the other pole there are innumerable vocations having different requirements and opportunities. Different Vocations require different types of workers possessing different types of theoretical and practical qualifications. It is the business of the Vocational Guidance Officer to assist an individual possessing "Certain assets, liabilities, and possibilities to select" from the large number of available vocations one which is regarded to be the most suitable and appropriate for the pupil, in consideration to his personal assets, such as intelligence, aptitude, interests, personality traits. He also helps the individual to prepare himself for it, enter into it and last of all to prosper in it.

If all the occupations were alike and there were no individual differences there would have been no necessity for any vocational guidance.) But in actual practice we see that individuals vary from one another in their abilities and different occupations have different requirements. So the problem of guidance crops up.

Vocational Guidance Programme.

(Vocational Guidance programme includes a set of activities each of which may be regarded as a clear function of the educational process. These activities may be listed in the following way.

1. G. E. Myers—Principles and Techniques of Vocational Guidance, McGraw-Hill Book Company, INC. New York, 1941.

(a) Identifying, observing, testing, recording of test results and interpretation of all other traits of an individual whom we want to guide. This may be named as individual inventory.

(b) Identifying, gathering information regarding the scopes and requirements of different vocations, making tentative lists of avenues of employment, recording and interpretation of facts related with different types of vocations. Gathering information regarding arrangements for suitable education and training for such vocations or employments.

(c) Counselling Process—which is an art as well as a science. It refers to the actual method by which pupils are counselled.

(d) Making contact with probable employers for placement and adjustment of pupils.

(e) Follow-up, evaluation and research work to be carried on by the counsellor.)

Vocational guidance programme should be drawn up in such a way that it can serve an individual pupil from early childhood to adulthood. Again this programme should be open to all people of the country.

Vocational Guidance and Vocational Education.

(One must be careful not to confuse vocational guidance with vocational education. Vocational guidance consists in the assistance given in choosing the vocation and to make a plan for the preparation or training for the vocation. Whereas vocational education means the actual preparation, through education and training, for the future occupation. Yet it is also evident that though they are not exactly the same still they are inseparably connected with each other and both of them necessarily go together for all practical purposes. Hence there are some people who are of the opinion that Vocational guidance is a part of vocational education. If we carefully go through the definition of vocational guidance given by the National Vocational Guidance Association of the U. S. A. in 1937, we see that they think that Vocational education is concerned with the “preparation for the vocation” and it forms the “intermediate step between choosing it and entering upon

it". Myers₁ thinks "Vocational guidance as an intergral part of an organised educational programme and not as something apart from education that is being wished upon the schools by a group of enthusiasts because there is no other agency to handle it.")

Vocational Education in the Family and in the Society.

Struggle for existence forced the early races of mankind to introduce some sort of Vocational education for human beings. They had to conquer their physical environment which was full of dangers and rigors although there were abundance of natural resources. In those days human society was rather static and the store of knowledge held by men limited. But as time changes and civilization progresses the area of human knowledge expands very rapidly. New inventions and new discoveries are now things of everyday occurrence. Unforeseen demands on human abilities and efficiency increase accordingly. New channels of occupation and vocation increase at an incredible rate. An unaided individual naturally feel nonplussed to find where to go and what to do. So vocational training centres for giving vocational education to young men and women are being established everywhere. But in early days there were probably two procedures. In ancient India people were divided into different groups or castes on the basis of the professions followed by the members of a particular family or by the members of a particular group. Members of different families followed different occupations and professions. Younger generations used to get their education and vocational training either as a natural outcome of being a member of a particular family or by studious observation of the art and practices of other adult-members of the local social group. In the first case youngmen were educated and trained by parents and elder members of the family whereas in the second procedure they learnt through careful imitation. There were a few Tols and some Gurus who used to teach their pupils only some academic subjects. There was no organised educa-

1. G. E. Myers.—Principles and Techniques of Vocational Guidance, McGraw-Hill Book Company. INC. New York, 1941.

tional institution for giving formal vocational education and vocational training in former days. Of course in those days of simplicity and abundance problems were few and industry did not develop to such an extent as we have it now-a-days.

Modern Society cannot expect to survive without making sufficient provisions for all forms of vocational education and vocational training the need for which has been thrust upon every country by the expansion of knowledge. The son of a farmer can still learn farming from his father. But that knowledge will surely be inadequate to help him to cope with the grow more food campaign. He must bring some scientific knowledge to bear upon his indigenous leaning. So there should be a large number of agricultural schools and colleges for imparting systematic teaching in the scientific way of agriculture to all pupils who intend to learn agricultural science.

(Vocations are innumerable. Their requirements too are diversified. Naturally our youngmen have to equip themselves in all respects in order to make themselves fit for different types of vocations and to do justice to them. They can get some casual training through observation, imitation and pick up methods but it will definitely be better if there are opportunities for organised training by future employers, skilled craftsmen, schools, colleges and by some other agencies which are concerned with industrial development and training.) Present age is the age of increased production. The old handcrafts give place to power-driven machines. So in the modern age the observation method, imitation method and the pick up method of training of workers are gradually becoming ineffective and inadequate. Over and above (progress of science and modern scientific inventions have increased the demand for large number of properly trained personnel and technicians. This increased demand necessitates the establishment of large number of vocational schools and colleges under public control.)

Again the stability and progress of the society render such institutions indispensable. In addition to vocational schools and colleges, apprenticeship courses run by commercial firms, factories, railways and others will be of immense help. The

traditional apprenticeship system followed in England has proved to be a very effective and efficient method of training of workers. Some of the employers provide food, clothings, living quarters and some pocket-allowances to their apprentices. In addition to practical training the training-firm should teach all apprentices reading, writing and arithmetic to the extent as is found necessary in doing their jobs.

(Stability and progress of a country depend upon the production of its wealth. Production of wealth depends upon the conservation of human and natural resources of the country. A good educational system alone can help us in this matter. In a democratic country like India we will have to make provision for good vocational education for the security, stability and progress of our country. We should remember that vocational education is a special type of education which helps to develop the material and human assets of the country. On the one hand vocational education teaches us how to conserve natural resources of the country and on the other hand it teaches us how to conserve human resources. It helps to conserve human resources through actual teaching which promotes the moral and other human capacities. Conservation of material resources are performed through dissemination and transmission of skills, knowledges, results of inventions and several other monumental works done by human efforts.)

Educational Guidance.

We have already mentioned the name of another kind of guidance service which is known as Educational Guidance. Educationists are particularly concerned with Educational and Vocational guidance. There are diversified courses of studies which prepare individuals for different types of occupations. As there are differences among individuals as regards their abilities and capacities so there are different persons suitable for different courses of studies. A pupil's desideratum is to choose a particular course of study that will fall in with his natural aptitude and the duty of the Guidance Officer is to assist him in making his choice of such a course of study. An individual's choice of the course of study will of course be influenced by the

requirements of the Vocation which he intends to select in future.

Brewer in his book "The Vocational Guidance Movement"¹ says that: "Educational guidance may be defined as a conscious effort to assist in the intellectual growth of an individual.... Anything that has to do with instruction or with learning may come under the term educational guidance."

Again in one of his later publications Brewer² said that educational guidance includes following activities :—

"How to study ; using the common tools of learning ; adjusting school life to other activities ; regularly attending on school and to school tasks ; learning to speak, interview, compose in writing, take examinations, and use libraries ; and making the important educational decisions at each of the many forks in the road."

Educational guidance may be said to be the process of assisting an individual pupil to determine and understand his own abilities, aptitudes, interests, opportunities, needs, problems and limitations and to make proper choice of a suitable course of study, which will enable him to complete his studies successfully and adjust himself to his environment, so that he can serve the society properly and enjoy a happy life. Educational guidance may be regarded as the functioning part of the school programme and is definitely related to the school curriculum.

The Education Commission (Kothari Commission, 1964-66) is of the opinion that "One of the main functions of guidance at the Secondary level is to aid in the identification and development of the abilities and interests of adolescent pupil. It helps these pupils to understand their own strengths and limitations and to do scholastic work at the level of their ability ; to gain information about educational and vocational opportunities and requirements ; to make realistic educational and vocational choices and plans based on the consideration of all

1. J. M. Brewer—The Vocational Guidance Movement, p. 14, The Macmillan Company, New York, 1918.
2. J. M. Brewer—Education as Guidance. p. 114. The Macmillan Company, New York. 1932.

relevant factors; and to find solutions to their problems of personal and social adjustment in the school and at home."

Ruth Strang, is of the opinion that a programme of educational guidance should include the following :—

1. Helping a student to adjust his academic load to his ability.
2. Substituting a more suitable course for one in which the student has failed, instead of requiring him to repeat the subject.
3. Adapting methods of teaching to the individual in a class.
4. Placing the responsibility for learning with the student.
5. Scheduling opportunities for counselling students as an intrinsic part of their curriculum.
6. Recognizing student's real interest and providing opportunities for each students' participation in the student activities, which unless carried to excess, seem to have a beneficial effect on scholarship."

Guidance and Education

Guidance is a process and not a method. "Guidance refers to the assistance given to individuals" in the making of necessary adjustments to their environment and also in distributing themselves to suitable vocational, recreational, health, and social—civic-opportunities." Purpose of guidance is to promote personality development and self-realisation and to help pupils in making necessary adjustments to their environment.

Education aims at proper development of the child so that he becomes a good citizen and enjoys happiness in life. In schools teachers hope that their pupils will acquire sound health, grow capacity to face difficulties realistically, develop power of problem solving, have the best functioning of their intelligence and establish good relationships with other people of the society.

The aims and objectives of education and guidance seem to be similar. They are so interrelated that many people are apt

1. Ruth Strang—Educational Guidance—Its principles & practice. The Macmillan company, New York. 1949.
2. W. M. Proctor—The Task of Guidance in a Modern School. California Journal of Secondary Education, March, 1937, 12.

to be confused in forming ideas about them. There are some people who think that education and guidance are synonymous terms. They say that "education is guidance and guidance is education."

There is another group of people who would say that "instruction is not guidance and must be carefully distinguished from it. Guidance sometimes makes use of instruction, but it is not itself instruction."

Jones said "whenever in the learning process the teacher assists the child to learn, guidance is present Choices in methods [of learning] are often, if not always, possible. The efficient teacher is continually trying to help the pupil to find the method that is best suited to him. Such assistance is guidance Teaching conceived of as assisting the pupil to learn is in all essentials guidance."

Again Jones opined that "All guidance is education but some aspects of education are not guidance ; their objectives are the same—the development of the individual—but the methods used in education are by no means the same as those used in guidance."¹

In actual class teaching it is very difficult to think of "guidance and instruction as two co-ordinate functions of education." Wrinkle and Gilchrist said that "Teaching without intelligent guidance cannot be good teaching, and guidance without good teaching is incomplete. Teaching and guidance are inseparable."²

But Myers said that "adapting teaching methods to individual needs is not educational guidance. It is just good teaching." Again Myers said that "the confusion between educational guidance and education itself seems to arise out of failure to differentiate between the process, which is educational guidance (course, curriculum and school guidance), and certain methods and techniques by which the process of education itself is carried forward."³ In another place Myers said that "Voca-

1. Arthus J. Jones—Principles of Guidance and Pupil Personnel Work. New York. Mc Graw—Hill Book Publishing Co. 4th ed. 1951.
2. Wrinkle and Gilchrist : Secondary Education For American Democracy.
3. G. E. Myers—Principles and Techniques of Vocational Guidance—Mc-Graw-Hill Book Co. INC, 1941—p. 23. p. 84.

tional guidance is an integral part of an adequate programme of public education." (p. 84)

According to some people "guidance is a function of education and directly contributes to the realisation of the schools' total objective."

From above discussions it seems that the guidance programme embraces all "extra-instructional Services" of the total educational programme.

It is really difficult to draw a line of demarcation between the terms education and guidance. Occasionally a large portion of any service rendered to pupils may be considered as guidance and a small portion may be considered as traditional instruction. On the contrary a small portion of the service may be considered as guidance and a major portion may be regarded as traditional instruction. It is very difficult to differentiate the terms education and guidance.

Difficulties of Guidance Programme

Some of the current problems faced by the guidance programme are listed below.

1. This programme has not yet been so popular. Owing to lack of proper understanding the guidance programme has not yet been accepted as a useful programme even by the teachers and parents. A whole hearted co-operation of all is necessary for its success.
2. Want of Leadership.
3. Enough money is not available for proper publicity, publication of guidance materials and bulletins.
4. Want of competent counselling personnel. There are very few properly trained or experienced counsellors, supervisors, administrators and instructors. Work load of a Guidance Officer is very heavy but a poor remuneration is given to him.
5. Want of adequate training facilities.
6. Administrative difficulties. There should be a good administrative machinery for the proper implementation of this programme. There should be a central organisation in the principal city of the State, several Zonal Organisations, rural and urban units in every part of the country.

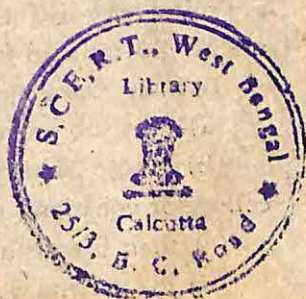
7. Various types of educational institutions have not yet been established in the country for admitting pupils possessing varied abilities and interests. A pupil may not find the type of school or college which his counsellor advises him to join. Therefore various types of educational institutions should be established for catering the needs of all types of pupils.

8. An active co-operation of the local Employment Exchange, Labour Department, Directorate of Agriculture, Directorate of Industries and other departments of the Government is essential to the success of the guidance programme.

9. More researches and experimentation in this field should be carried on.

EXERCISES

1. Elucidate the concept of Vocational Guidance and show how it is related to proper selection of educational courses. C.M.C. 1965 W.B.
2. What is vocational guidance? It is said that in the secondary stage, educational and vocational guidance are inseparable. Discuss. C.M.C. 1966. W.B.
3. "Guidance is an integral part of education." Justify the above statement. C.M.C. 1967. W.B.
4. How can the concepts of educational and vocational guidance be realised in practice in our secondary schools? What are the difficulties on the way? C.M.C. 1969. W.B.
5. Discuss the concept of the term Educational and vocational guidance as it has developed in our country. Indicate its necessity in a Multipurpose school. B. T. 1969. C.U.



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S.C.E.R.T., West Bengal

Date

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CHAPTER II

THE NECESSITY FOR GUIDANCE SERVICE IN OUR COUNTRY

The aim of Educational and Vocational Guidance—Utility of Guidance Service in Schools—Condition of India—Guidance at different stages of School Education—Guidance in the Primary Stage—Guidance in Secondary Schools—Need For Guidance—Philosophical Reasons, Sociological Reasons, Health Reasons, Psychological Reasons and Pedagogical Reasons.

The aim of Educational and Vocational Guidance.

The aim of educational guidance is to help our pupils in choosing an appropriate educational programme and in making progress in it. Similarly vocational guidance is intended to assist an individual to choose an appropriate vocation, to train him for the vocation and to help him to progress in it.

Utility of Guidance Service In Schools.

We generally see that in large number of cases our pupils feel that they are all at sea when they are to choose their courses of studies. We actually see, even to-day, that most of our schools do not offer any assistance to their pupils in planning their future programmes of studies. A few of the Higher Secondary and Multipurpose Schools select students for their science stream only on the basis of previous achievements. Very often students choose subjects without considering whether they are suitable or useful to them. Ultimately in many cases they are bewildered and frustrated.

In many cases pupils select their subjects because,

- (a) the subjects chosen seem to be interesting and easy ;
- (b) those subjects are required for entering into a certain college or vocation (e. g. Biology for Medical Colleges.) ;
- (c) their friends have taken those subjects ;
- (d) his parents want that he should study those subjects ;
- (e) the school situated near his home provides only those subjects ; and
- (f) there may be many other reasons.

If the selection of subjects, courses and vocations are commensurate with the intelligence, ability, interest and needs of the pupil he will do very good in his studies and will be successful in life. He will be able to lead a peaceful life and will be a good citizen.

But if his choices are not correct or are inappropriate he will have to face a dangerous situation. If the course of study or vocation selected by him is beyond his abilities it will lead to failure, dissatisfaction with school, truancy or withdrawal from the school or vocation altogether. Again, if all other fellow students in the class are much more superior to him in scholastic aptitude and other abilities his feeling of inferiority is likely to be intensified and he will try to fly away from the school. ✓

In some cases parents want that their children should follow a particular course and force their children to take subjects which are neither appropriate nor congenial to them. There are some people who are of the opinion that it is not worth spending money for a child who does not follow science curriculum. Parents possessing such an idea want to make their child a scientist without considering the abilities of the child.

In our country most parents think that their children should go to a college for higher education. Psychologists know that pupils with low I. Q. (or with an I. Q. below 100) may not be successful in college courses. In many cases pupils of low ability fail to show good results and their parents get annoyed. It can be said that low ability combined with high ambition may lead to inappropriate choices.

On the other hand there may be cases of high ability coupled with low level of aspirations. These are in no way less difficult cases. Such a situation may result into both personal and national loss. Examples are not rare where students with very high I. Q. and potentiality often choose courses which are much below their real capacity. Such cases create serious problems to class-room teachers also. Many indifferent parents and pupils fail to realise the actual level of potentialities of pupils. When such pupils select courses below their capacities they do not get any interest in their studies and get frustrated.

Therefore pupils need some educational and vocational guidance from some experts before choosing their educational courses and careers. Proper guidance will prevent many problems.

A man is a social being. One of the aims of education is to help a man to become a good citizen. Proper educational opportunities should be given to every child for the benefit of the society as well as for his personal happiness.

Condition Of India

Now let us consider the problems which we face in our country. When India was not independent the Government of India introduced a system of education with a view to produce some English-knowing clerks and Baboos to meet the requirements of the different offices of the East India Company. Naturally the educational system introduced by the East India Company did not consider the real needs of Indian people or Indian soil.

During the later years of the foreign rule several Educational Commissions were constituted from time to time but most of their recommendations were not put into practice.

Until the other day our secondary school curriculum was full of limitations. Our high schools used to provide a single branch of study with a few optional subjects to be read during the last few years. They did not pay proper attention to the abilities, interests and aptitudes of the pupils. There was little scope for the proper development of the personality traits of children.

Some drawbacks in the curriculum may be listed in the following way :—

(a) The curriculum was subject-centred instead of being child-centred. Whatever might have been the nature of the abilities and aptitudes of the child he would have to read some common subjects.

(b) It laid great emphasis on the development of the child's mind and memory. It is doubtful whether such a curriculum could develop the child's personality traits. It neglected his emotional and spiritual needs. It was not successful in discovering and developing all the talents and potentialities of the child which are essential to the proper development of the child.

(c) Our curriculum was unilateral, university oriented and bookish. As the secondary school curriculum was rigid and of one track nature it was useless on the part of the teacher-counsellor to give any educational guidance. In such a rigid curriculum it was only possible to fit the child to the existing curriculum but not the curriculum to the child.

(d) Even the Secondary Education Commission¹ remarked that "It fails to prepare students for life. It does not give them a real understanding of or an insight into the world outside school into which they have presently to enter."

(e) It was too much dominated by the School-Leaving-Certificate Examination. To an ordinary man the aim of school education was to pass the School Final Examination and to enter in a college for higher education.

(f) Such a bookish and rigid curriculum does not provide facilities for technical and other vocational studies. In the modern scientific and technological age there should be provisions for a rich variety of vocational courses in secondary schools.

(g) In such a curriculum situation a teacher becomes a mere instructor or a giver of knowledge. The child is sure to be a passive listener or a passive receiver of knowledge given by the knowledge monger teacher.

But long before the attainment of independence educated persons and social reformers of India, like Raja Rammohan Ray, Swami Vivekananda and poet Rabindra Nath Tagore could realise the drawbacks of the system of education introduced by the foreign Government. They felt the need for some modification. But owing to foreign rule they were unable to change the system.

It is only after independence that our national government is trying its best to solve the multifarious problems of our educational system. It has been realised that our educational system should be appropriate to our country.

The Education Commission of 1964-66 (The Kothari Commission Report—P. 1) clearly stated that "on the quality and number of persons coming out of our schools and colleges will depend our success in the great enterprise of national reconstruction."

1, Secondary Education Commission Report.

tion whose principal objective is to raise the standard of living of our people”.

In this dynamic world like every other thing our society is also changing rapidly. Along with the rapid social changes our educational system should also change accordingly.

Our educational leaders are trying to change our educational system so as to relate it to the life, needs and aspirations of the nation.

We should try to improve the standard of our education qualitatively in order to make it internationally comparable.

Our government is trying to expand the educational facilities on the basis of man power needs. Our aim is the equalisation of educational opportunities, full employment and adequate food for all.

It has also been realised that we should give more emphasis on moral education and inculcate a sense of social responsibility amongst our pupils.

There are several other similar items to which our educational thinkers are paying their attention, viz. ; “educational research, educational and vocational guidance, introduction of work-experience (such as manual work, production experience etc.), vocationalisation of secondary education, proper training of teachers, training of Career Masters, education of girls etc.”

Guidance at different stages of School Education.

Educational and vocational guidance is necessary for all pupils through out the whole period of their schooling. Though we want to give our pupils educational and vocational guidance, as teachers we are concerned mainly with educational guidance. We should give a pupil education according to his own needs, maturity, abilities and aptitudes.

In schools, educational guidance is concerned mainly with curriculum guidance and guidance for life in school. Educational Guidance Officer is to help a pupil in as many ways as possible. Guidance for life in school is mainly concerned with the following items :—

- (a) Knowing and accepting the school and school situation.
- (b) Pupil's social adjustment in the school. A school may be

regarded as a miniature society in many ways and it may be an important society in the world of students. Therefore a student should be able to adjust himself to that society.

(c) Student's relationship with other group or groups of students.

(d) The student should be able to adjust himself to the class situation.

(e) He will have to be guided to participate in all Co-curricular activities of the school.

(f) He should be taught how to talk and mix with other students.

(g) Some guidance is necessary regarding the methods of study and work. The class-room teacher should tell him how to learn easily and how to use school library.

(h) The student should get proper guidance regarding school rules and discipline.

(i) If there be any educational retardation the purpose of guidance is to fight with the reasons of retardation.

(j) The student should be helped to have better knowledge of his own abilities and propensities.

Guidance in the Primary Stage.

Guidance is necessary in the Primary stage also. In Primary Schools guidance is necessary for helping pupils "to make a satisfactory transition from home to school." The pupil should be shown his class room at the very beginning. The young learner should be taught how to behave with other pupils and the teachers. He should be told the meaning of his class routine and all other rules of the school. He should be encouraged to participate in all co-curricular activities arranged by the school.

There may be some gifted, backward and physically handicapped children in the school. The Educational Guidance Officer will have to identify those pupils and prescribe some special type of education for them. Probable drop-outs should be encouraged to stay in schools by developing insight and favourable attitudes in them.

Guidance in Secondary Schools.

Our concepts of the nature and scope of education have

changed to a considerable extent. Accordingly our conception of curriculum has also changed. At present every child is considered as a unique personality. So each pupil is to be educated in a unique fashion. Our educational philosophers are now-a-days preaching for 3 A's—that is education according to age, ability and aptitude.

As a result our secondary school curriculum has been changed to a large extent on the basis of the recommendations of the Secondary Education Commission¹ (Mudaliar Commission Report of 1954).

On the basis of the recommendations of the Secondary Education Commission some of our existing High Schools have been converted into Higher Secondary or Multipurpose Schools. These Higher Secondary Schools offer education upto Class XI instead of upto Class X. Several Indian States have adopted this scheme and extended the schooling period by one year. "This scheme required a diversification of studies at the end of Class VIII and the provision of a variety of courses for students in classes IX to XI"² (Kothari Commission Report). It provides some core subjects upto Class X. Multipurpose Schools offer different groups of elective subjects to pupils in the last three classes.

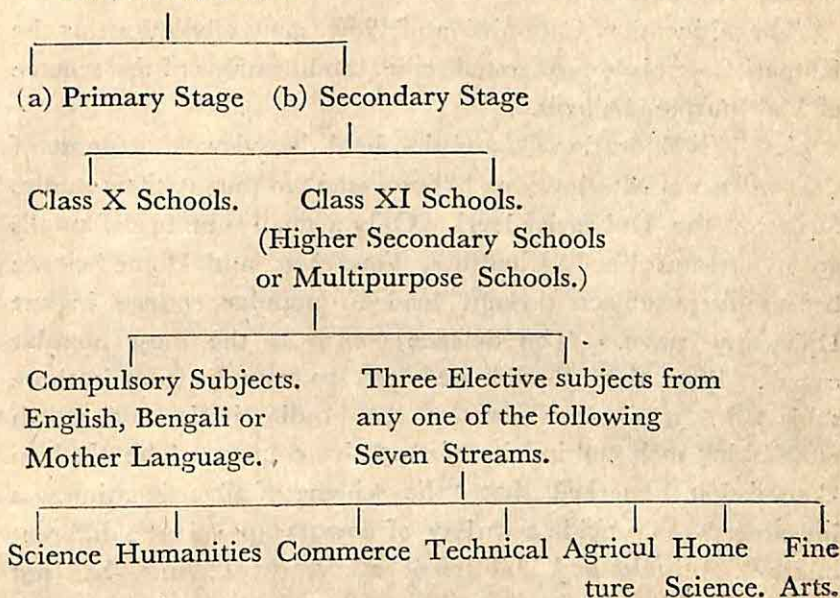
A pupil is at liberty to take a fourth subject in addition to three elective subjects in any particular stream. All pupils are required to select all the elective subjects from a single stream.

The present structure of the educational system of India (Higher Secondary System) is almost like the following :—

1. Secondary Education Commission Report. Govt. of India. 1954.
2. Dr. D. S. Kothari Commission Report of June, 1966. [Generally known simply as Education Commission or Kothari Commission]

1. School Education.

School Education



2. Higher Education. Following types of educational institutions are included in this group.

- | | |
|----------------------------|-----------------------------------|
| (a) P. U. Course. | (b) Colleges and Universities. |
| (c) Engineering colleges. | (d) Medical colleges. |
| (e) Law colleges. | (f) Teachers' Training colleges. |
| (g) Agricultural colleges. | (h) Research Institutes etc. etc. |

The Secondary Education Commission thought that introduction of such a system will provide a variety of courses to suit the different needs, interests and aptitudes of adolescent students.

In the last two or three years of our Higher Secondary Schools or High Schools our students prepare themselves either for college education or for practical life. We know that a large number of students do not go for college education and enter into some vocations. Therefore education given in the top classes of Secondary Schools should have some vocational bias. The aim of educational guidance at school is to help a child to know his own abilities, capacities, interests, vocational inclinations and then to choose a suitable and profitable course of study. If subjects chosen are not appropriate for him he may not come

out successful. So some sort of educational guidance is essential for school students.

The Education Commission of 1966, generally known as the Kothari Commission suggested some modifications of the scheme of Multipurpose Schools.

1. This Education Commission held the view that most of the students of Multipurpose Schools want to pursue their studies further at the University level. Only a small number of pupils go to streams like Agriculture, Fine Arts and Home Science because these subjects do not lead to popular courses in the University stage. The Science course is the most popular course. Why then should we open so many streams in those subjects? In a poor country like India it is not worth establishing such multiplicity of expensive courses. The Kothari Commission remarked that "the scheme of diversification was introduced—to provide a variety of courses to suit the different interests, aptitudes and abilities of adolescent students—has not been realised."

The second objection is the specialisation of studies at an early age. In Higher Secondary Schools streaming of pupils into specialised groups are made at the age of 13 or 14, that is from Class IX. According to the opinion of this commission (Kothari Commission) this age is too early for channelling students into different courses.

At present many educationists of the advanced countries are in favour of lengthening the period of general education. According to them diversification and specialisation should take place at the senior stage of secondary schools.

The Kothari Commission recommended "that in the non-vocational schools a common curriculum of general education should be provided in the first ten years of school education and that diversification of studies and specialisation should begin only at the higher secondary stage." This Education Commission recommended the extension of the existing Multipurpose school course by another year. So in future there will be classes I to XII in our Higher Secondary Schools.

If the recommendations of this commission are accepted then the structure of our school system will be as follows :—

The Lower Primary stage—Classes I—IV.

The Higher Primary Stage—Classes V—VII.

The Lower Secondary Stage—Classes VIII—X.

The Higher Secondary Stage—Classes XI—XII.

“After the completion of the first ten years of schooling leading to the High School Examination, the special interests and abilities of the student will have been generally formed, and, with a good system of guidance and counselling, he can be helped in the choice of his future career and educational course. An extensive and varied programme of vocational education should be provided at this stage.”

The Mudaliar Commission recommended that there will be a “core curriculum common to all secondary school students, and a variety of optional subjects which can be elected according to their special interests, needs and abilities.”

According to our present system of education there are provisions for the following seven streams in our Higher Secondary Schools.

(1) Humanities, (2) Science, (3) Technical, (4) Commerce, (5) Agriculture, (6) Fine Arts and (7) Home Science.

A student will have to select three elective subjects from any one of the abovementioned streams in addition to two compulsory subjects. (English and Mother Language).

The Kothari Commission differed from the recommendations of the Mudaliar Commission as regards the prescribed subjects and their mode of selection by students. The Kothari Commission recommended that the present seven categories of elective subjects should be divided into two categories viz. ; Arts and Science. At present a pupil is to choose three elective subjects either from the Science Group or Humanities Group or Commerce Group and so on. But the Kothari Commission recommended a mixed course. According to existing system a student cannot combine an elective subject from one group with elective subjects from another group. The Kothari Commission recommended that a student taking Arts course may also take one science subject. Again a student of Science course may also elect an Arts subject in classes XI and XII.

The new scheme provides for “greater freedom and elasticity

in the grouping of subjects within the limited range in the new classes XI and XII.

At the Higher secondary stage the course will be divided at two levels—ordinary level and advanced level. A good school can have two kinds of curricula—a common curriculum for pupils of average ability and an advanced curriculum for bright pupils.”

Technical Stream.

The Lower Secondary Schools and the Higher Secondary Schools will be responsible for the education and training of the pupils who will become “semi-skilled and skilled workers (including first line supervisors) and technicians (diploma holders)—both Supervisory and higher technician or technologist.” They may also prepare the ground for the early education of “engineers (Graduates) and research and design engineers (Post Graduate)”.

There will be one public examination at the end of Class X. There will be another public examination at the end of the Higher Secondary Stage i.e., after Class XII.

During adolescence period individuals differ from one another mentally, physically, emotionally and spiritually. We hope that in course of time all our students will become good citizens of free India, so we should train them to learn “the most difficult of all arts, the art of living”.

Both the Sri Prokasa Committee¹ and the Education Commission recommended that we should make provision for instruction in moral and spiritual values.

The Education Commission recommended that “A period or two a week should be allotted to education in moral and spiritual values in an organised attempt to develop the character of the pupils and inculcate in them a respect for religion other than their own. Social service activities will now include participation in the life of the local community.” (p. 189).

The Secondary Education Commission opined that “the provision of diversified courses of instruction imposes on teachers and school administrators the additional responsibility of giving

1. Report of the Committee on Religious and Moral Instruction, Ministry of Education, Government of India, New Delhi, 1960.

proper guidance to pupils in their choice of courses and careers." The same commission again said that "Guidance is essential for the success of any educational progress, and we hope before long it will be available in all our educational systems."

There are some other situations where educational guidance seem to be essential. There may be some mentally handicapped children, such as, idiots, imbeciles and morons amongst our pupils. Again there may be some children who are backward and underachievers. Low intelligence, want of motivation, physical diseases, emotional conflicts, poor study habits, cultural deprivation, bad environmental condition of the home, poor economic condition of parents and many other conditions may be responsible for backwardness and underachievement. The Guidance Officer should diagnose the reasons for underachievement and guide the child in a proper way so that the child can get rid of such troubles. The Education Commission (1964-66) has stated that "Guidance and counselling services have an important role to play in the education of the backward, especially with regard to identification of the group, diagnosis of their special defects and planning for their education and future education."

Need for Guidance in General.

From what has so far been said it is clear now that the guidance programme aims at assisting students" in making adjustments to educational, vocational, health, moral, social, civic, personal and educational problems." Therefore guidance is necessary, in every sphere of life, and that for the following reasons.

Philosophical Reasons.

It is a matter of great regret that now-a-days students in general seem to have no definite philosophy of life and have no idea of ethics of life. A student is unable to say what his aim of life is, what he will do after finishing his studies or what he wants to be in the future. Confusion and uncertainty overwhelm his mind and he sees an uncertain or a gloomy future before him. Most of the students are in this way confused

and perplexed. Lack of provision for religious and moral education may be a reason for such a state of affairs. But students should be well-balanced and capable of adjusting themselves to actual situations in life. In order to make them capable of facing the realities of life there should be provision for intellectual and spiritual instruction in their student life. Teachers will have to give them some idea about the ultimate realities of life and metaphysical truth. They should realise that they are creations of God and are expected to perform certain specific duties in this world. Guidance is necessary for helping students to win over all such conflicts and to understand the great values of life.

Sociological Reasons.

Sociological conditions of our country are changing everyday. India is a poor but developing country. Tremendous efforts are being made, without any pause, to uplift the country industrially and economically. Along with the establishment of new industries, factories, commercial firms and research laboratories avenues of employment are increasing day by day. Different industries require workers having specialised type of education and training. Our educational institutions and training centres will have to supply duly trained personnel to these industries. Our students and most of the parents are not aware of such training systems and job requirements. So our students will have to be assisted in selecting a particular course of study or practical training, suited to their abilities and one of the jobs which are being created now-a-days.

Unemployment among educated youngmen is a dangerous problem of the day. Majority of our students do not get jobs even after prolonged efforts. A considerable portion of those who get employment are forced to accept jobs much below their expectations. Even Employment Exchanges cannot provide all our students with suitable jobs. Most of our students prefer white-collar jobs. There are some occupations which are over crowded whereas some occupations suffer from dearth of duly trained personnel. Educational institutions will have to give education and training to its pupils for these uncrowded and

unknown or less known occupations. On the one hand our man power is wasted, on the other hand some sectors of industry and commerce badly suffer from the want of duly qualified workers. A developing country like India cannot afford to sustain such huge loss of man power and march towards sure ruination. Some sort of guidance is urgently needed in such cases.

Whenever a big industry is established, in any part of the country, people from different parts of India, having different cultural background and mother languages come there for jobs. A large number of people of different religions and customs constitute a new and cosmopolitan society there. New schools and colleges are established there. Young students of such an area will have to adjust themselves into such a new type of cosmopolitan society. So they will require some guidance for adjusting themselves to such situations.

In former days Indian boys used to adapt their family occupations. Senior members of the family used to train their younger members for future life. But due to present economic stringencies and sociological changes such a system has become obsolete. Parents cannot keep information about the multitudinous types of new courses and occupations which are being created in the country. It is an inescapable duty of the educational institutions to help their students in this area also.

Health Reasons.

Health is wealth. A healthy school environment, provision for recreational activities and a carefully designed physical education programme will improve the physical and mental health of students. Sound physical health will keep a student emotionally fit also. The energy, drive and agility for work of a student largely depend upon his health.

Disease and ill health may create various troubles. Weak and disabled students will not be able to concentrate their minds to their studies like physically fit students. Constant unsuccess due to ill health will act upon their mental health also. If such a condition continues for a longer period of time a sense of insecurity will develop in them. Ultimately, with-

drawl tendencies and other types of maladjustments may crop up in them. Health problems may stand as a stumbling block before our national educational programmes.

In a poor country like India we are experiencing nutritional problems in a tremendous form. Most of our school children get diets which are far from a balanced diet. A large number of our students suffer from bad eyesight, defective hearing, under weight, decaying teeth and skin diseases. We cannot expect normal behaviour from suffering children.

We should not hold our eternal poverty as the root of all evils. It may be one of the causes. Most of the Indian students, parents and teachers do not pay their attention to this matter. Condition should not be like this in a welfare state. Whenever any behaviour disorder is noticed a teacher should find out the possible causes of such behaviour disorders. If it is thought that such disorder is the result of ill health the student should be referred to a physician for medical treatment.

A good number of students disregard good health practices as they are ignorant of good health habits. They should be taught in the school how to keep good health. Teachers should constantly observe their students and maintain health records for all students. Parents should be requested to remain always alert about the physical and mental health of their children while at home. It can be said that school guidance programme is essential for health reasons also.

Psychological Reasons.

It is an universally accepted fact that individuals differ from one another. No two persons in this world are identical in all respects. Every individual will differ from another in respect of mental make up, aptitude, interest and in several other qualities. All students are not therefore, to shine in every particular line of study or doing every kind of job. Different levels of intelligence will be necessary for success in different courses of studies. Different students having different abilities, aptitudes and interests will be successful in different courses of studies and jobs.

The first and foremost duty of a student is to know his own abilities, interests and aptitudes and then to select a course of

study and an occupation where he will be at peace with himself and shine as a matter of course. It is the sacred duty of the school guidance programme to make proper arrangements for acquainting each and every student with his or her own assets and liabilities. The school counsellor will have to undertake the responsibility of disseminating up-to-date information about courses and careers to his students in order to enable them to select their proper course and occupation.

It has already been said that wrong selection of a course of study or an occupation will cause ultimate bewilderment and frustration. Wrong selection will be disastrous both to the society and to the individual student. This ought to be regarded as a national calamity to avoid which there should be adequate provision for school guidance programme in all our schools and colleges. Special arrangements should be made for helping mentally retarded and emotionally troubled students also. Our aim is to place right man in the right place. Therefore we can safely say that from the psychological point of view guidance is necessary.

Pedagogical Reasons.

The Educational system which was in vogue during the foreign rule was not appropriate to our country. At present our Government has prepared many new educational plans and programmes. Our constitution has granted compulsory Primary Education for all children. As a result all our children will have the chance to attend schools in future. So in future the number of school going children in our country will be enormous. Naturally there will be a heterogeneous group of children to be dealt with by our teachers. But the same type of education may not be suitable for all students of advanced classes. Different types of educational programmes will have to be introduced for students of different levels of abilities. Assets and liabilities of students will have to be determined for channelling them into different streams. Guidance programme will have to be organised in order to cope with these problems.

We have established Multipurpose Schools with diversified courses of studies. A student can choose any one from these

courses which is found most suitable for his mental abilities, aptitudes, interests, personality traits and previous academic achievements. School guidance programme should be introduced in order to help students to discover their innate abilities, aptitudes, interests and personality traits and to make their choice of courses of studies fruitful. It is expected that different courses will lead to different vocations. It is true that the final selection of vocations has to be made later on, still students will make, though not directly, a preliminary selection of vocations along with their selection of courses. In selecting a desirable course of study students will require some sort of guidance from an experienced person.

Currently wayside wastage and stagnation have caused headache to our educational administrators. Our educational leaders are trying their best to find out ways and means for fighting these problems. These problems should be attacked from all angles. Parents should be made to understand and realise the necessity of keeping their children in schools for the full term. School environment should be made decent and attractive in order to attract students. All possible measures should be taken to motivate students to remain in the school.

Guidance is necessary for better learning also. Principles of economy of learning should be practised by all teachers in their classes for enhancing the learning of students.

When the class room consists of a homogeneous group of children a common curriculum or a conventional pattern of general education may provide opportunity for natural development to all. But there will be a heterogeneous group of children in the class. There may be some students who are gifted, some average, few slow-learners, few with special academic disability and few socially maladjusted in the same class. The class room atmosphere should be modified by the teacher in such a way that it may help each and every student to solve his individual problems with courage and confidence.

So we see that school guidance programme is necessary from various considerations.

EXERCISES

1. What do you mean by guidance? Examine the need and importance of guidance as an integral part of secondary education in your state. B. T. 1965 C. U.
2. Describe the organisation of Educational and Vocational Guidance for school in West Bengal, specify the functions of the various institutions in the setup. B. T. 1966. C. U.
3. Discuss the concept of Educational and Vocational Guidance as it has developed in India. Show that the objectives of a Multilateral School cannot be realised without the development of a good guidance service in the school. B. T. 1967. C. U.
4. What is a school guidance service? Discuss how it can benefit pupils. B. T. 1967. C. U.
5. Discuss the necessity of organising educational and vocational guidance service in our schools. B. T. 1968. C. U.
6. Write the synopsis of a talk which you would give to a sceptical audience to convince it of the need for guidance services in schools. C. M. C. 1966. W. B.
7. Formulate the aims and scope of educational and vocational guidance with reference to pupils of higher secondary school. C. M. C. 1967. W. B.
8. "Guidance should begin with the child's entrance into school and continue beyond the child's school termination." Discuss. C. M. C. 1968. W. B.
9. In what ways can a programme of school guidance help a student in West Bengal at the end of class VIII? C. M. C. 1969. W. B.

CHAPTER III

• BASIC DATA NECESSARY FOR GUIDANCE

Pupils, Courses and Vocations—Pupil's Personal Data—Interview as a technique.

An Educational Guidance Officer will help an individual student to choose a correct course of study and to do air progress in it. Again the purpose of vocational guidance is to help an individual student to choose a desirable and appropriate vocation, "to prepare for it and to progress in it."

Before prescribing medicines to a patient a doctor will gather some information regarding the ailment of the patient and symptoms of the disease. A lawyer collects various information from his client about the case before presenting the case to a judge. Similarly a Guidance Officer will require several important information before giving guidance to a student. These important information are his basic data. They are so vital that no guidance can be given without them.

It is the bounden duty of an Educational and Vocational Guidance Officer to know the following basic data if he wants to give guidance to his students. The basic data necessary for guidance are as follows :—

- (a) Personal data—pupil—his abilities and propensities.
- (b) Information regarding the courses of studies available in the country.
- (c) Knowledge of the avenues of occupations or vocations.

1. Pupil's Personal Data—Knowledge of the pupil's intelligence, aptitude, interest, physical and mental health, home conditions, sociological and environmental conditions and financial position of parents are the essential items without which the counsellor cannot go even a single step. Learning capacities of students should also be taken into consideration. This topic will be discussed in details later on.

2. Information regarding the courses of studies (facilities and opportunities for education and training) available in the country.

Students will come to the Educational Guidance Officer for

information regarding different types of educational institutions, the diversified courses of studies followed there and their locations. There are several class-ten schools, Multipurpose schools with different streams, colleges offering different courses of studies, nursing schools, trade schools, politechnics, vocational schools, Universities, apprenticeship courses organised by several factories and commercial concerns in our country. Different types of institutions prepare their pupils for different vocations and professions. Each of them has got its own admission requirements. There are provisions for scholarships and fellowships in several educational institutions. Some of them maintain hostels for students who come from distant places. There are some "Residential" or "Boarding" schools which admit only residential scholars. But most of our educational institutions admit day scholars.

It is the specific duty of the Guidance Officer to supply all these information to his pupils. So he will have to keep all information regarding the existing educational institutions and Universities of the country. If possible he should keep some information regarding the avenues available in foreign countries also. In addition to the Educational and Vocational counsellor, the Headmaster of the School, all the teachers of the school, the librarian, the hostel superintendent and our national leaders will have to act as advisers of students in this matter.

Students promoted to Class IX of Higher Secondary Schools, students who have passed the Higher Secondary Examination (Final) and students who have just graduated need information regarding institutions for still higher education and further studies. In each educational institution a committee named as Educational and Vocational Guidance Committee, consisting of teachers, parents, some persons interested in education, some persons engaged in trade and commerce, some students, a representative of the local Employment Exchange and the Guidance Officer (Counsellor), may be established. This Educational and Vocational Guidance Committee will act as a clearing-house for all up-to-date information regarding different types of schools and training opportunities offered by various institutions.

All schools and colleges should publish bulletins showing the following items.

- (a) Their programme of work.
- (b) Particulars about the members of the Teaching Staff.
- (c) Syllabus followed by them.
- (d) Vocations for which students are prepared.
- (e) Admission requirements.
- (f) Scholarships and fellowships available.
- (g) Nature of hostel accommodation provided.
- (h) Estimated costs involved.
- (i) Types of co-curricular activities followed in the institution.
- (j) Whether Guidance Service is provided in the institution.
- (k) Miscellaneous information which may be required by students and parents.

There may be some special type of educational institutions which cater to the needs of backward students and students suffering from physical defects. There are some schools meant for blind, deaf and dumb students. There are several other institutions meant for students suffering from various other types of physical and mental defects.

In our country large number of students are not aware of all these facts so they want to collect necessary information about colleges just after passing the School Final or Higher Secondary Examinations. Majority of Indian students get their school education in rural areas whereas most of the colleges, vocational and higher educational institutions are situated in urban areas. Detailed information regarding degree colleges, vocational schools and colleges, Universities and other institutions for higher education should be made available to them. The Educational and Vocational Counsellor is to help his students in choosing suitable courses of studies and careers. There should be a statewide organisation for helping intending counsellors.

The counsellor should prepare lists and charts showing the names of different types of educational institutions. He should have a list of highly specialised types of schools and colleges also. In his lists and charts of schools and colleges the

location, entrance requirements, nature and description of the courses offered by them, scholarships and fellowships available, hostel accommodation and its financial aspects, the vocations for which training is given, scope for further education and all other relevant information which may be necessary for the students should be shown against the names of individual school or college.

Generally following information are required by pupils :—

1. Name of the School or college.
2. The year of foundation of the institution.
3. Address of the educational institution.
4. Bus routes.
5. Names and qualifications of the members of the teaching staff.

6. Type of the school or college, the age of admission, courses followed, curriculum, nature of science laboratories and research facilities available there. Whether there is any provision for practical training in any vocation.

Number of seats available in the institution. Whether there are some reserved seats for girls and students hailing from some particular part of the country.

7. Types of internal and external examinations that are held. Previous academic results of the institution. Number of successful candidates in previous years. Number of medals, scholarships and fellowships available there.

8. Size of classes. Rate of tuition fees, other fees and other incidental charges which are payable to the institution.

9. Whether there is provision for the following :—

Health Service, physical training, games, A. C. C. or N. C. C., Boys Scouts, Girl Guide, good library, supervised studies, excursions and other co-curricular activities.

10. Hostel arrangements. Charges for board and lodgings, and other incidental expenses which are expected to be incurred there.

11. Whether Guidance service is offered there. Whether it is possible and permitted to do part-time jobs during vacations, what are the future prospects of successful students and avenues of employment after passing the Final Examination.

3. Avenues of Occupations or Vocations.

An Educational and Vocational Guidance Officer or the counsellor should keep information regarding the availability of different types of employment and vocations in the country. He will have to keep information about the job requirements and try to prepare his students accordingly. Educational institutions will assist their pupils to develop and prepare themselves properly for their future life. So the school environment and the syllabus should be made suitable for and favourable to the preparation of the pupil according to the specific needs and requirements of the different types of vocations. He will always remain in touch with the prospective employers. He will regularly visit the employers and discuss with them questions pertaining to education and training of his pupils. He can make arrangements for practical training of his pupils by those future employers. Now-a-days many factories and commercial houses train their apprentices and future employees.

As the educational institutions intend to educate children for life, the educational system should be vocationally biased. By such an educational system pupils will get education and training for such future vocations as will be appropriate to their abilities and capacities.

The Educational and Vocational Guidance Officer will be able to help his pupils in getting jobs also. If a particular educational institution is situated in an industrially advanced area large number of its successful students may be absorbed in those local industries. If the institution is situated in a big commercial city we can expect that many students of such an institution will enter into big commercial firms. But in rural areas, specially in an agricultural country like India, majority of our students will have to be absorbed in agricultural work.

The Guidance Officer should keep information about employment potentialities so that he can help pupils in choosing a desirable and appropriate vocation. Pupils should be helped to select vocations themselves. The Guidance Officer need not dictate. Such a system may solve to some extent the gigantic problem of unemployment which has become a colossal obstacle to our national prosperity.

Pupil's Personal Data.

Know the pupil thoroughly. The first requirement of guidance is knowing and understanding of the individual student. It is essential to get some idea of the social environment in which the pupil is born and brought up and the psychological facts which predetermines the course of study which will be the most suitable for a particular student. The counsellor should have fair knowledge of the social, physical, economic conditions and psychological factors which are influencing the child before giving him any guidance. The pupil should also be made aware of his innate propensities before selecting his course and career.

Pupil's data necessary for guidance :—

The Guidance Officer should get an accurate picture of the pupil whom he will have to assist. He should collect information about the past and present life of the pupil as far as possible. The present and past history of the pupil's family and society will be of much help to him. According to Myers, following information about the pupil are essential.

"1. General data, 2. Physical data, 3. Psychological data, 4. Social environmental data, 5. Achievement data and 6. Data concerning the individual's educational and vocational plans".

But according to other experts following are the essential information which are to be collected.

1. General information—Before giving any assistance to a pupil a counsellor should know the pupil's "name, nickname, address, sex, birth place, date of birth, religious affiliation etc." For getting an idea of the family life it is necessary to know the number and ages of the pupil's brothers and sisters. The knowledge of the nationality, birth place, marital life of the parents are also necessary for proper guidance.

2. Health data—This item includes the information about both the physical and the mental health of the pupil. Under the term "physical health" come information concerning vision, speech, hearing, diseases and other physical defects. Mental

health will state whether the pupil is normal, neurotic or psychotic or is suffering from any other mental troubles.

3. Achievement data—Achievement data will reveal the pupil's growth pattern, scholastic achievement in academic subjects, performance in school examinations and language usage. The type and standard of the school or college will have to be taken into consideration.

4. Aptitude data—Different children may possess aptitudes for different types of activities. A pupil may possess following types of aptitudes—special, scientific, mechanical, artistic, numerical etc. etc. His aptitude will indicate in what type of occupation he will do good.

5. Personal Adjustment data—Personal adjustment refers to the pupil's "social, personal and emotional relationships with" his parents, brothers, sisters, other members of the family and friends. The counsellor should enquire whether the pupil participates in different co-curricular activities organised by the school. Whether he takes active part in athletics, debates, dramas and in the activities of the student government.

6. Interest data—A pupil will study a school subject or perform a work with great zeal if he finds interest in the subject or work. His interest in the subject will motivate him to read the subject. If the pupil is interested in a particular vocation he will get pleasure and satisfaction in it. He will not read a subject in which he is not interested. Therefore the pupil's interests should be taken into account while giving him guidance.

7. Future Plans—This item refers to the aims, objectives and future educational and vocational plans of the pupil. The counsellor will examine whether the future goal or level of aspiration of the pupil is quite consistent with his abilities, interests and aptitudes.

8. Social and Economic Status of the Family—Knowledge of the family background of the pupil is very important for guidance. Influence of home condition upon a pupil is very great. In order to get an accurate picture of the pupil a counsellor will have to collect information regarding the social, economic and cultural status of the pupil's family. The pupil's

relationships to his parents, siblings and other members of the family should also be taken into account.

How to Collect Data

Different techniques may be applied for collecting different information about a pupil. Several techniques will have to be applied one after another in order to avoid errors and chances of misinterpretation of a single measurement. Following techniques may be used for collecting data.

1. (a) Standardised Tests and Class-room Teacher made Tests.

These tests are used for determining intelligence, aptitude, attitude, interest, scholastic achievements and other mental abilities.

Class-room teacher made tests may be used for quick and easy evaluation of student's performances. Evaluations made by class-room teacher made tests may not be free from the influence of subjectivity and personal idiosyncracies. Even "halo-effect" may influence the marks given by teachers. Though it should not be talked open yet in some cases marks awarded by some teachers are regulated by the consideration of the pupil's social position and pecuniary, political and social importance of their guardians. Such evaluations are not reliable.

So it is better to use standardised tests for determining the abilities, aptitudes and scholastic achievements of students. Standardised tests have been found to be very useful and helpful in getting an objective picture of the abilities and interests of students. Following types of standardised tests may be used by the Educational and Vocational Guidance Officer.

- (i) Intelligence tests are applied for determining intelligence.
- (ii) Aptitude tests are used for determining Mechanical aptitude and other aptitudes of students. In many cases different Vocational Tests are also used.
- (iii) Achievement Tests are used for determining students' level of achievement in school subjects.
- (iv) Reading Tests are used for determining reading ability.

(v) Several other Psychological Tests are also used for determining different other abilities of students.

The names, nature and uses of standardised tests which are generally used by Educational and Vocational Guidance Officers will be discussed later on.

But too much weight should not be given blindly to standardised tests. They should be regarded as one of the many methods used for determining the nature of innate abilities and other qualities of students.

(b) A Few Non-standardised Methods.

It is true that standardised tests are more reliable, objective or impersonal techniques of collecting pupils' data. But there are some non-standardised methods which are also very useful. A child may be regarded "as a dynamic human being" and non-standardised methods are expected to give some more meaningful idea about the pupil's real and dynamic life than the standardised tests. The following may be regarded as non-standardised methods :—

Observation, interview, biography, diary, case history, questionnaire, anecdotal records, rating scales etc.

(c) Personality Tests. Projective and Expressive Techniques. These tests will be discussed later on.

2. Cumulative Record Cards.

Different information and particulars about an individual student, his performances and scholastic achievements, for a long period of time, are recorded systematically in a particularly designed pro-forma. An up-to-date information about the pupil is maintained in this pro-forma. This pro-forma in which these descriptive and accumulated records are maintained is known as the Cumulative Record Card. The Cumulative Record Card is very useful for guidance purpose. This topic will be fully discussed later on.

3. Other Methods for collecting Information.

There are several other methods by which information about a pupil may be collected. The names of a few of them are stated below :—

a) health examination by a qualified physician,

b) life history collected from other persons who intimately know the pupil,

- (c) Case study,
- (d) home visit and
- (e) recommendation letters from some respectable persons etc.

Interview as a Technique.

Interview refers to seeing and talking with a man for some time with some definite purpose. Personal interview enables a counsellor to know an individual student. At the time of interview, through friendly conversation and some skilful questions the counsellor tries to explore ideas, felt needs and problems of the student. The counsellor fixes some date and time for interviewing the student. On the fixed date and time the counsellor interviews the student in a quiet and peaceful situation.

After establishing the necessary rapport and creating self-confidence in the student the counsellor begins to talk with the student in a cordial and friendly manner. During interview the student is asked to express freely his feelings and thoughts. The counsellor should prepare some questionnaires which are to be presented to the student in order to elicit some responses that may reveal the thinking process, feelings, likings, dislikings, aims and values of life and emotional conflicts, if there be any, of the student. Through the process of interview the counsellor will be able to get some idea of the student's attitude towards his parents, home, school, society, himself and many other things.

The counsellor should interview parents of the student. Parents will be able to supply valuable information about the student. The Class-teacher and other teachers of the school will also be able to supply some information about the student.

There may be four types of interview, such as, "(a) Employment Interview—to determine an applicant's fitness for a job, (b) Informational Interview—to get general information about an individual, (c) The Disciplinary Interview—to cause some behavioural changes within the interviewee, and (d) Counselling Interview—to develop self-responsibility and self-initiative of the counsellee."

Interview is very useful because it can be used in receiving and giving information. Through personal interview a pupil may be helped to solve his problems and to make his future plan of action. Interviews help a pupil to release his tensions and emotional feelings.

A counsellor will have to keep necessary records of interview. All information collected through interview should be kept confidential. The counsellor should undergo proper training before interviewing a student. He will have to collect some preliminary information or background knowledge about the interviewee from different sources before the date of interview. The interviewer should know how to close an interview. Everything should be preplanned.

There may be some students who are usually very interviewshy. In such cases the counsellor should be very careful to make the student self-confident and care free.

EXERCISES

1. In helping a pupil at the end of class VIII of a Multipurpose school to choose the right course, what basic data would you make use of and how? C. M. C. 1966. W. B.

2. How would you collect data about the pupils for guiding them in the selection of their courses at the end of Class VIII? C. M. C. 1968.

W. B.

3. What basic data would a counsellor require for providing educational and vocational guidance to pupils at the end of class VIII? C. M. C. 1968. W. B.

4. What basic data do you require for guiding a pupil in choosing the right course and subjects in class IX? C.M.C. 1969. W. B.

5. What basic data would you require of a pupil for offering him scientific educational and vocational guidance at the end of class VIII? How would you collect them? B. T. 1966. C. U.

6. What are the basic data which should be collected in regard to a student of class VIII for offering Educational and vocational guidance? B. T. 1969. C. U.

CHAPTER IV

INTELLIGENCE AND STRUCTURE OF HUMAN ABILITIES

Meaning and Nature of Intelligence—Structure of Human Abilities.

Earlier psychologists prepared many tests to measure some specific functions, such as attention, attention span and auditory acuity. Many of them were psychophysical instead of being purely psychological. It is true that they were objective and reliable tests but they could not serve the purpose of educationists and teachers. It was not possible to determine, with those tests, any higher or complex mental trait of pupils in actual school situation. Psychological theories and ideas of modern psychologists are changing. Gestalt psychologists or configurationalists hold the view "that the mind or personality always acts as a whole, and not in segments, and that investigation must always take account of its total action if any real understanding is to be achieved." Psychological terms such as feeling, reasoning, memory, learning etc. should be "thought of as functions of the entire personality" and not as separate and unitary capacity of the mind.

This change in psychological ideas and practice can be seen in the early work of the world's most renowned psychologist Alfred Binet as early as 1893. During those years Alfred Binet tried to prepare tests to measure general memory, sensory discrimination, imagination and comprehension. But these tests were found to be less useful than his famous Intelligence Test which he prepared later on. In 1905 Binet published his first Intelligence Test. He wanted to make a comprehensive survey of the whole mental make up of an individual by his test. He paid almost no attention to the idea of psychophysical processes and to the notion of separate mental faculties while preparing his tests. A human being was not considered "as a composite of specific faculties". From the observed results of earlier investigations Binet thought that intelligence is "the tendency to take and maintain a definite direction; the capacity for making

adaptations for the purpose of attaining a desired end ; and the power of atuo-criticism.”¹ It has already been said that Faculty psychologists tried to measure separate mental faculties, such as, memory, attention and reasoning etc. Binet could not accept “the idea of separate functions for the concept of general intelligence.” He tried to measure “their combined functional capacity without any pretence for measuring the exact contribution of each to the total product.” Professor Mursell,² states that Binet thought that “mental life must be considered as a total interconnected organic unity, and not as a sum of independent parts.” When assembling test items Binet laid greater emphasis on true intellectual problems and tasks. So he included following types of items in his test :—recall of digits, naming common objects, mental addition, sentence completion, defining abstract terms, execution of commands, telling directions, paper folding, copying of designs and many other such items.

Different psychologists are trying to measure intelligence by constructing different verbal and non-verbal tests. P.O. Witty,³ circastically remarked that “during the period of rapid increase in the number of instruments for the measurement of intelligence, few persons sought an answer to the question : What is intelligence ? Most mental testers blithely tested intelligence without seriously inquiring about that which they were trying to measure.” Another psychologist H. C. Hines,⁴ said that “no one knows precisely what intelligence is.”

In current years people, in all walks of life, use the term intelligence but the true concept of the term may not be clear and definite to all. It is true that there is some thing which can be named as intelligence. Like energy we cannot touch it or see it but it exists.

1. L. J. Cronbach—Essentials of Psychological Testing. Harper and Brothers, New York, p, 103.
2. J.L.Mursell—Psychological Testing—Longmans, Green and Co. New York. 1950.
3. Paul.O.Witty, “Intelligence: Its Nature, Development, and Measurement,” in Educational Psychology by C.E.Skinner and Associates, p. 438, New York: Prentice—Hall, Inc, 1936.
4. H.C.Hines, Measuring Intelligence, p. 1, Boston: Houghton Mifflin Company, 1923.

Some Definitions of Intelligence.

Different psychologists define intelligence from different angles of view. Some of the definitions are given below. Though many of them seem to be conflicting with one another and somewhat confusing still they have many points in common.

Stern (1914)₁ said that "intelligence is a general capacity of the individual consciously to adjust his thinking to new requirements."

According to Wells (1917)₂ "Intelligence means precisely the property of so recombining our behaviour patterns as to act better in novel situations."

Woodworth₃ says that "As a word, intelligence is closely related to intellect, which is a comprehensive term for observing, understanding, thinking, remembering, and all ways of knowing and of getting knowledge.....It is useful, helpful in solving a problem and reaching a goal..... Intelligence means intellect put to use. It is the use of intellectual abilities for handling a situation or accomplishing any task." At another place Woodworth₄ remarks that in an intelligence test a testee "has to see the point of the problem now set him, and to adopt what he has learned to this novel situation."

Colvin₅ states that "An individual possesses intelligence in so far as he has learned or can learn to adjust himself to his environment."

Thorndike₆ wrote that "we may then define intellect in general as the power of good responses from the point of view of truth or fact." Another American Psychologist Terman₇ said that "An individual is intelligent in proportion as he is able to carry on abstract thinking."

1. W.Stern. The Psychological methods of testing intelligence, Trans. by G.M.Whipple. Baltimore: Warwick and York, 1914.
2. F.L.Wells—Mental Adjustment. New York: D.Appleton Co., 1917.
3. R.S.Woodworth and D.G.Marquis—Psychology, Methuen and Co. Ltd. London, 1949.
4. R.S.Woodworth—Intelligence and Its Measurement, 1921.
5. Colvin—Intelligence and Its Measurement, 1921.
6. Thorndike—Intelligence and Its Measurement, 1921.
7. L.M.Terman—Intelligence and Its Measurement, Journal of Educational Psychology, XII March '21.

Wagenen₁ defines an intelligence as the "Capacity to learn and to adjust to relatively new and changing conditions."

Freeman₂ said that "Intelligence is represented in behavior by the capacity of the individual to adjust himself to new situations, to solve new problems, to learn." Again in another place Freeman₃ said that "Intelligence is the ability to learn actions or to perform new actions that are functionally useful."

It is evident that different psychologists lay emphasis on different points. Pintner₄ says that these various formulations may be classified into four groups, such as, "biological, educational, faculty and empirical." Whereas Freeman₅ groups them as social, organic and behaviouristic. But all of these classifications seem to be hazy because the various groupings generally overlap with each other.

Stoddard₆ thinks that it is not easy to define the term intelligence in a single sentence or two because it includes many abilities. Stoddard tried to analyse general intelligence under seven headings. According to him "intelligence is the ability to undertake activities that are characterised by (1) difficulty (2) complexity (3) abstractness (4) economy (5) adaptiveness to a goal (6) social value, and (7) the emergence of originals and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces."

In the definition given by Thorndike we see that he tries to explain intelligence as "the capacity to form an association." Thurstone's definition also is in conformity with the Association Theory of Thorndike.

1. M.J.Van Wagenen—"Intelligence and Its Measurement" in Readings in Educational Psychology, by C.Skinner and associates, P.401, New York: Farrar and Rinehart, INC, 1937.
2. F.N.Freeman—Mental Tests, Boston: Houghton Mifflin Company, 1926.
3. F.N.Freeman—The Meaning of intelligence, 39th Year Book, 1940.
4. R.Pintner—Intelligence Testing: Methods and results. New.ed; New York. Henry Holt and Co., 1931.
5. F.N.Freeman—Metal Tests, 1939.
6. G.D.Stoddard—The Meaning of Intelligence. The Macmillan Co. New York, 1943, P.4.

Knight¹ also accepts the idea of Association Theory and says that "In an intelligent act with reference to some aim we first discover the relevant qualities of the objects and ideas and then evoke other relevant ideas. It is the capacity for relational constructive thinking, directed to the attainment of some end". He gave emphasis to the motivational factor of intelligent behaviour. The more intelligent a person is more he possesses intellectual ability. Piaget₂ wrote in his "The psychology of Intelligence" that "Behaviour becomes more intelligent as the pathways between the subject and the objects on which it acts cease to be simple and become progressively more complex".

According to Thorndike intelligence has four attributes

- (a) Level or altitude—means how much difficult tasks can be performed by an individual. If all the activities are arranged in order of difficulty and a man is asked to perform the tasks of graded difficulty one after another his level of intelligence will be determined by the fact how far he could go on performing the tasks,
- (b) Range—range generally means the number of individual tasks which a man can perform at any given level,
- (c) Area—area means the sum total of all ranges, and
- (d) Speed—speed refers to the time taken by an individual to perform the intellectual tasks.

Thorndike speaks of three kinds of intelligence, viz ;

- (a) Abstract Intelligence or Verbal Intelligence,
- (b) Concrete or mechanical Intelligence, and
- (c) Social Intelligence.

Many people are of opinion that intelligence is the ability to do some intellectual activity. The term intellectual activity needs some clarification which again can be collected from these definitions.

Then comes the question whether intelligence is hereditary. Boynton is of the opinion that "intelligence is hereditary and it involves not only adaptation but reconstruction." There

1. R.Knight—Intelligence and Intelligence Testing — Methuen, London.
2. J.Piaget—The Psychology of Intelligence—Routledge, Kegan Paul, London.

are some psychologists who hold the view that it should be broken into its elements many of which are modifiable by the environment. Some psychologists are of the opinion that although intelligence is hereditary it is frequently influenced by the environment and formal schooling. We noticed this idea when Freeman said that intelligence is the "Capacity of the individual to adjust himself to new situations, to solve new problems, to learn." In this world no two persons are born with exactly same native capacity. There are individual differences. There are some persons who are very intelligent. We also see many persons who are not so intelligent. A genius or a lucky chap is born with a high degree of intelligence whereas a helpless idiot is born with almost no intelligence. All depend upon the luck of the child. At the time of birth all children are helpless and they entirely depend upon their parents. It is generally seen that a child born with a high degree of native abilities develops rapidly if the environment around him is favourable. He is able even to overcome the evil effects of a bad environment. But an unlucky child born with lower native abilities cannot develop so rapidly even if the environment around him is transformed into a most favourable one. It is evident from above discussions that intelligence is mostly hereditary and is influenced to a small extent by the environment and formal schooling.

Now come the interesting questions—whether intelligence can be improved? Whether it can be improved beyond certain limit? There are some evidences which substantiate the statement that the intelligence of a boy can be improved to some extent by improving the environment. Some specialised training can help a boy to overcome some of his drawbacks, such as, shyness, timidity and so on. Some people will say that some bad social traits can be changed by environmental changes but not his psychological and temperamental traits. Others say that temperamental traits can also be changed to some extent by glandular treatment. In an experiment Burks₁ found

1. Barbara S. Burks—Nature and Nurture: The influence upon intelligence, 27 Year Book, National Society for the study of Education. Part I, Ch.—X P. 223, Bloomington, III: Pub. School Publishing Co, 1928.

that "about 17 per cent of the differences in intelligence among individuals is due to difference in home environment." Burks said that, "home environment in rare, extreme cases may account for as much as 20 points of increment above the expected, or congenital, level." Wellman and Stoddard₁ found in their studies that by bettering the conditions of the environment it is possible to get "large changes in I. Q., in both upward and downward directions." They again said that the best period for the change of I. Q. is the early childhood. Bingham₂, however, said that an I. Q. increases or decreases upto 12 per cent in one case out of 22 cases in the high school stage.

A few other experimenters noticed some fluctuations in I. Q. Schmidt₃ said that he noticed an increase of I. Q. from 52 to 89 by giving the child some special treatment. But his findings could not be accepted by large number of psychologists.

The I. Q. generally remains constant but owing to certain reasons, such as, changes in the child's mental or physical health, breaking or broken home conditions, changed school environment, changing testing conditions and errors of measurement one may notice some changes in I. Q. So it seems that in some cases the real I. Q. can not be measured on account of some external or internal reasons. But as soon as those obstacles are removed the real I. Q., which is a bit higher, can be measured. Again if there be any gain it will be very small. There are some people who hold the view that I. Q. may vary from 5 to 10 points on account of standard error. So an I. Q. of 110 may be stated as a band of I. Q. scores ranging from 100 to 120.

1. B. L. Wellman and G. D. Stoddard, *The I. Q. : A problem in social construction*, "The social Frontier, V (February, 1939) 151".
2. W. V. D. Bingham—*Aptitude and Aptitude Testing*, P. 40, Harper & Brothers. New York, 1937.
3. B. Schmidt—"Changes in the personal, social and intellectual behaviour of children originally classified as feeble minded". *Psychol Monograph*. 1946, 60, No. 281.

From what has been said so far it is clear that intelligence is not knowledge. Though intelligence is highly related to knowledge still it is not knowledge, because knowledge may increase to a large extent along with further studies and experiences.

Intelligence should not be regarded as a talent as talent can be increased by practice.

Intelligence should not be confused with memory. It has been observed by some psychologists that even a less intelligent boy may possess good memory.

Intelligence should not be confused with skill because skill can be increased to a great extent through constant practice.

Structure of Human Abilities.

Spearman, in his Oxford study, found that all scores of tests of abilities usually exhibited positive intercorrelations and they tended to form a hierarchy. He noticed that when a number of tests were applied there appeared a "quality of intelligence" which was common to all tests. According to him this accounted for the positive intercorrelations and the formation of the hierarchy. On the basis of this experiment he propounded his famous "two-factor theory" of human ability. According to Spearman's "two-factor theory", every performance of an individual can be explained by two factors—one "g" or general factor, and another "s" or the specific factor. Spearman's "g" is not the general intelligence, because according to him "g" is only one aspect of intelligence but not the whole intelligence. At the first instance he spoke only of "g" but could not account for the whole of the other correlations. Later on he accepted that there is the specific factor "s", which can be said to be relatively independent of the general factor. Spearman wrote in his "Abilities of Man" that "Whenever the tetrad equation holds throughout any table of correlations and only when it does so, then every individual measurement of every ability can be divided into two independent parts. The first part is the "general factor", "g", which varies freely from individual to individual, but remains the same for anyone individual in respect of all correlated abilities. The second part is the

"specific factor", "s", which varies not only from individual to individual, but also from one ability to another in the same individual.

If 4 tests are applied to a boy and their scores are diagrammatically represented the experimenter will get the following diagram according to Spearman's "two-factor theory."

Test No.	g	s ₁	s ₂	s ₃	s ₄
Test I	x	x			
Test II	x		x		
Test III	x			x	
Test IV	x				x

These results may be represented in another form. If four tests are applied the experimenter will get different "g" and "s" factors for different tests. The quantity of loadings of "g" and "s" in all the four tests may not be equal. Suppose the loadings of "g" factors are a_1, a_2, a_3, a_4 and the loadings in "s" factors are l_1, l_2, l_3 and l_4 . Then the experimenter may get the following diagram.

$$\text{Test I} = a_1g - l_1s_1$$

$$\text{Test II} = a_2g - l_2s_2$$

$$\text{Test III} = a_3g - l_3s_3$$

$$\text{Test IV} = a_4g - l_4s_4$$

But Spearman's "two-factor theory" of intellectual ability was opposed by many psychologists and the most prominent among them are Profs. Burt, Thomson and Thurstone. Thomson suggested a new theory of intelligence. His theory of intelligence is known as "Thomson's Sampling Theory". According to this theory "mind is assumed to be made up of many independent bonds or powers".

When two tests or school examinations "sample the same bonds then a general or common factor can be said to exist between them." When similar "bonds or powers" do not play in two tests then the "General or Common factor" cannot be said to exist between them. Thomson thought that "g" was not "unitary" but "complex" and was in favour of three factors, viz., the general factor, the group factors and specific factors.

The serious objection to Spearman's theory is that in many cases perfect hierarchy cannot be achieved and many of the tetrad differences do not come to zero. Again his theory

cannot be used for the purpose of educational and vocational guidance because most of the vocations and education, particularly technical education, need special aptitudes. These special aptitudes find no place in his theory because they fall under the category of "group factors."

Burt gave a different idea and suggested a hierarchial structure of mind. He accepted all the three factors-general, group and specific. Burt thinks that the following abilities also belong to the group factor category : "Arithmetical, manual (drawing, writing, probably hand work of simpler kinds), Verbal (reading and spelling), Literary (composition in one's own tongue), linguistic (learning foreign languages), artistic, and musical."

Thurstone advanced a different theory of mental structure. He said that there is no general factor common to all tests, but a number of "primary group factors". This view is accepted by all American factorists. He found the following factors :— "V-verbal comprehension, W-word fluency, N-number, S-space, M-associate memory, P-perceptual speed and R-reasoning."

Holzinger advocated his bi-factor method which accepts a general and one or more group factors.

Spearman and his followers then observed that owing to the inclusion of some tests the nature of the hierarchy is disturbed. So they think that some of the tests may have a factor common amongst themselves, in addition to the general factor but not common to all of the tests. In this way they accepted the existence of group factors. Spearman observed the existence of about a dozen of group factors : "1. a special logical ability which possibly may not be innate but acquired ; 2. a mechanical ability ; 3. arithmetical ability ; 4. geometrical ability ; 5. a special social ability ; 6. reaction time ; 7. ability to form visual and auditory imagery ; 8. ability to appreciate music ; 9. general memorizing factor ; 10. sensory memory ; 11. verbal memory ; 12. non-verbal symbolic memory." Later on Spearman introduced three more non-cognitive factors, such as, "perseveration (p), Will (w) and Oscillation (o)."

CHAPTER V

INDIVIDUAL INTELLIGENCE TESTS AND GROUP TESTS OF INTELLIGENCE.

Binet's Intelligence Test Scale—Stanford Revision of Binet's Scale—Terman and Merrill Revision of 1937—Mental Age and Intelligence Quotient—Terman and Merrill Revision of 1960—The Wechsler-Bellevue Intelligence Scale (W-BIS)—Wechsler Intelligence Scale for Children (WISC)—Wechsler Adult Intelligence Scale—Group Tests—Performance Tests.

It has been stated in the previous chapter that an individual's intelligence is mainly hereditary and it is modifiable, though to a narrow extent, by the influence of the environment. School examinations can very roughly measure a pupil's intelligence and are not very satisfactory. In order to measure more accurately the intelligence of an individual or of a group of men many psychologists tried to prepare standardised psychological tests. Work with "Intelligence Tests" was started in France by Binet and Simon.

During the last part of the 19th Century, Alfred Binet, a renowned French psychologist, was studying behaviours of individuals in order to get an idea of an individual's reasoning, judgment and attention. He restricted himself to pure measures. During 1893 to 1911 he tried to study the reasons of differences between bright and dull individuals. In his studies he used tests for the size of the cranium, suggestibility, moral judgment, graphology, tactile discrimination and others. He found that the tests of sensory judgment had very little connection with the general mental functioning of an individual.

Binet's Intelligence Test Scale.

In 1904, authorities of the schools of Paris became very much concerned with some non-learners and backward children. It was observed that feeble-minded students were unable to follow standard curriculum and retarded the progress of the whole class. School authorities wanted to get rid of these trouble-making backward and dull children. They wanted to identify those children and to segregate children with good potentiality

from those children. At first school teachers tried to spot out incapable children. But their judgments were influenced by personal idiosyncrasies and halo effect. They hesitated to place children of rich family into the dull group. So the school authorities of Paris requested Binet to devise some methods by which it is possible to separate bright children from those who are dull. Binet was of the opinion that a child having high degree of general intelligence should do good in his studies. He engaged himself to find out some intelligence tests by which it is possible to determine the intelligence of an individual.

After a thorough investigation of the existing syllabus and environmental conditions Binet prepared a large number of test items and published his first Intelligence Test Scale in 1905 in collaboration with Simon. This is better known as "Binet-Simon Scale of Intelligence." Binet took another three years to give more meaningful shape to the major characteristics of his test items. He revised his original test items and published a revised Intelligence Test in 1908. In this revision he included different types of items appropriate to different age levels. The test items were arranged in order of difficulty. Binet made further revision of his test and published another revision of his test in 1911. In this revision (1911) some of the old items were eliminated and some new subtests were added. Different test items were meant for different age groups. Following types of test items were included in his test :—Repetition of short sentences, Repetition of digits, Description of pictures, to find out the missing parts in unfinished pictures, comprehension of questions, Paper folding and cutting, Difference between pairs of abstract terms, etc. Unfortunately Binet died at this time and could not complete his final work.

Stanford Revision of Binet Scale in 1916.

Binet's Intelligence Test is an individual test and is available to all. Both in the U. K. and in America several psychologists were also studying the same problem. Before those days many American psychologists were using introspection and questionnaire techniques for segregating subnormal children. After the publication of Binet's test, which is found to be more

impartial and independent of many circumstantial influences they accepted it as a helpful research technique and as a reliable measuring tool for determining intelligence of subnormal children. At Stanford an American psychologist L. M. Terman began to study Binet's tests in 1910. He revised some of the Binet's test items and in 1916 published the Stanford Revision of Binet Scale of Intelligence. The Stanford-Binet Scale became very popular because some of the test items were prepared for normal as well as superior children. Many research workers also adopted this test and determined the validity of their tests by using this test as criteria. In spite of several criticism this test was considered to be a very useful tool for all practical purposes. Because this test became very popular one should not think that there was no other test for measuring intelligence at that time. As a matter of fact there were some other tests which did not receive so much publicity. One day a few of them may come into prominence. Let us take the case of the Rorschach Ink Blot Test. In Binet's¹ monograph on "The Experimental Study of Intelligence" we see that Binet used Inkblot techniques to study his own daughter's imaginative and perceptual processes. But when he began to study the problem of intelligence he gave up his work on Inkblot tests. Inkblot Techniques came into prominence after about 20 years when Rorschach worked thoroughly with this technique.

Terman and Merrill Revision of 1937.

Another revision of the Stanford-Binet Scale of 1916 was made by Terman and Merrill in 1937. Terman and Merrill published two forms of the revised Stanford-Binet Scale. These are known as Forms L and M. We have already stated that both the Stanford revisions are individual tests. Stanford-Binet Scale is an age scale. In the first Stanford revision there were 90 test items arranged into different groups meant for different ages but all of them comprised a single form. In 1937 revision some of the test items were changed, some items were added and some were eliminated. In this revision

1. Peterson Joseph. Early conceptions and tests of intelligence. Yonkers: World Book Co. 1925. p. 146-150.

129 subtests of equivalent difficulty were included in each of the two forms of the test known as Form L and Form M. So each form of the test consists of 129 test items of the same difficulty. Some of the emotionally loaded items of the first revision were dropped in the second revision. In the first stanford revision the test items were arranged into subtests in 1-year steps for the ages 3 to 10 years and then there were subtests for ages 12 and 14. There were two more subtest groupings for Average Adults and Superior Adults in addition to others. Tests could not be definitely prescribed for ages 11 and 13. But in 1937 revision subtest groupings were provided for all ages beginning from age 2 to age 14 and then there were four adult levels. From ages 2 to 5 the subtest groupings were made at 6-month intervals and from ages 6 to 14 the groupings were made at 1-year intervals. The Adult stage was divided into the following four stages : Average Adult, Superior Adult I, Superior Adult II and Superior Adult III. As the 1937 revision begins from age 2, there were subtest groupings for ages 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$ and 5. Because of rapid mental growth at early ages Terman and Merrill thought it right to give narrow gaps in the early age levels. Test items included following types of tests : Information, ability to follow directions, simple reasoning, vocabulary, codes, induction, ingenuity, picture completion, memory, comprehension, arithmetical reasoning, finding out of absurdities, reconciliation of opposites etc.

It is expected that mental ability is something which increases with age and a good test item is that which is passed by more abler and older children. So they included items of increasing difficulty in tests meant for older children. A brighter child is expected to be able to answer more difficult questions.

Generally 6 test items are included in each subtest group. Credit of 1 month is given for each correct answer during early years. Credit of 2 or 3 or 4 months is given for each correct answer in the subtest groupings meant for other ages. Credit is given for success in each individual item for determining the "Mental Age" of an individual. The first step of Binet's Test is to determine the mental development of a child and to express it in a clear and comprehensible term called the Mental Age.

Mental age is an indication of mental maturity of an individual. When a tester wants to test intelligence of a child he will have to begin with test items which are meant for children of younger chronological age than the particular child. The mental level of a child will be determined by the standard of the items passed by him. Therefore by mental age of a child we mean the level on the Binet-Simon Scale at which a particular child can just pass the tests.

Determination Of Mental Age And Intelligence Quotient.

For the determination of mental age one is to begin with some age level much below the chronological age of the child. It will be seen that a particular child will be able to answer correctly all the test items of a particular age. Then he will be asked to go to the items meant for the next higher age group. If it is found that he can answer correctly all the items of this group too he will proceed to the next group. In course of progress it will be seen that he cannot answer correctly all the test items of a group. So the age level of highest group of subtest all the items of which are passed by him will be called his basal age or base mental age. Now he will try to answer test items from other subgroups meant for higher ages. In this way he will proceed until he is unable to answer all the items for two successive age groups.

Now suppose that a child of 6 years old can pass all the test items meant for the chronological age 6. Again suppose he answers correctly 2 items from tests meant for 7 years old, 1 item from tests meant for 8 years old and 1 item from tests meant for 10 years old and no more. He will definitely get credit for two months for each test item passed from upper age levels. Here his basal age is 6. Therefore his mental age will have to be calculated in the following way.

Basal age	...	...	...	6 years.
For 7 years	2 items ; 2 marks for each item.			4 months.
For 8 years	1 item ; 2 marks for each item.			2 months.
For 10 years	1 item ; 2 marks for each item.			2 months.
Mental Age =				6 years 8 months.

A child with higher mental age than his chronological age is surely of superior mental development than a child of lower mental age of his own chronological age. No doubt the mental age of a child measures the child's performance but in order to get a more precise idea about the child's brightness in comparison with other children of his age it is necessary to determine his Intelligence Quotient or I.Q. The term Intelligence Quotient or I.Q. was first suggested by Stern and it was applied by Terman in his 1916 revision of Binet-Simon Scale. Mathematically the I.Q. is calculated by dividing a child's mental age by his chronological age. The I.Q. is the ratio of M. A. to C. A. For convenience and for removing the decimal points it is generally multiplied by 100. Therefore

$$I. Q. = \frac{\text{Mental Age}}{\text{Chronological Age}} \times 100 = \frac{M. A.}{C. A.} \times 100.$$

While working with this scale one will face the real difficulty in testing older adolescents and adults because Terman and his associates were of the opinion that an individual's ability to perform subtests ceases to improve after certain age level at an expected rate. They held the view that there is "a point or age of arrest, beyond which mental age does not increase although of course chronological age increases just as before". In the first revision of the test 16 was taken as the age of arrest. Hence I.Q. of all persons of ages 16 and over were calculated by taking 16 as the highest denominator i.e., the highest chronological age. But this arbitrary selection of denominator gave rise to several criticisms and gradually it had to be changed. In case where the true chronological age of an individual is more than 13 a correction is applied. This correction will naturally lower down the real chronological age. It has been suggested while calculating the I. Q. all chronological ages from 13 to 16 are to be scaled down by $\frac{1}{3}$ of the chronological age above 13.

The C. A. of a child of 14 is taken as 164 months instead of 168 months. It may be calculated in the following way :—

14 years = 13 years plus 12 months = 168 months.

Here $\frac{1}{3}$ of 12 months = 4 months.

Now deduct 4 months from 12 months.

14 years will be taken as 13 years 8 months or 164 months.

Similarly in another case where the actual C. A is 15 years the corrected C. A will be 172 months instead of 180 months.

Again the mental age of an average adult is taken as 15. It is thought that average persons never go beyond these levels. While calculating M. A of an older individual, 14 is selected as the basal age and to this is added whatever credit he gets in the adult-level items.

Therefore for the calculation of I.Q. of an individual above 16 years his M.A is divided by his corrected C. A which is supposed to be 15 i.e., "those beyond the chronological age of 16, the base line or denominator used is 15."

Merits of the Binet Intelligence Scale.

By using the Binet's Scale it is possible to find out individual differences and to measure the innate ability of a child. This test generally appeals to children, so it is easy to establish necessary rapport. It can be administered and scored at ease. The knowledge of a child's I.Q. enables his teachers to form an idea of the educational level upto which the child may be expected to reach in the future. Some psychologists are of the opinion that a child of I.Q. 90 or below may be expected to reach upto the 8th grade of a high school. A child of I.Q. 90 to 104 will do fairly good in his school career. A child of I.Q. 105 to 114 may complete his high school course with credit. Such a student may be advised to join an ordinary college. A student of I.Q. 115 to 119 may be expected to be much benefited by advanced college courses. It can be said with great emphasis that a student of I.Q. 120 or above will be able to do very good in a first grade college or in an University if properly guided and motivated. This test has been found to be very useful for research purposes also.

A Few Limitations of This Test.

All the revisions, including the 1937 revision, of the Stanford-Binet Scale have been criticized by many psychologists as an imperfect and unreliable measuring tool of intelligence. These

tests should be administered by well trained administrators. As it is an individual and paper and pencil test it consumes much time in testing a child. If in any case proper rapport is not established the test results will be inaccurate. Another point which has been mentioned by many is regarding the method by which the validity of the test has been determined.

Some critics opined that this test includes large number of verbal tests in English and is very often found to be unsuitable for children who do not know English. Test scores are likely to be influenced by educational achievement and cultural development of the child.

This test measures present ability more than innate ability and gives more emphasis to verbal abilities.

Collection of test items in the Stanford-Binet is a hodge-podge of different types of items. It may not serve as a good diagnostic test for measuring separately the separate aspects of mental development.

Another limitation of this test is that it is an age-scale and the method adapted for the determination of the Mental Age of individuals above 16 is arbitrary. Most of the later test makers have preferred point scale method instead of the age-scale method.

Terman and Merrill Revision of 1960.

The third or the latest revision of the Stanford-Binet Intelligence Scale was published by Terman and Merrill in 1960.

This latest revision of the Stanford-Binet Scale is known as Form L-M because the best test items from the L and M Forms of the 1937 revision are included in this 1960 revision. This time test items are graded according to age levels. There are six subtests and one alternative subtest for each age level, in this revision. One alternative subtest has been added for each age level from 2 years to Superior Adult level III in order to meet the contingency if one of the regular subtest is spoiled during the process of actual administration. For age levels 2 to 4 years provision has been made for two sets of subtests at each age level. So there are 12 subtests for each age level for ages 2 to 4. For each

age level from 5 years through Superior Adult III there are six subtests for each age level. The examiner will give one month's credit for each subtest passed by the pupils at the lower age levels. Two month's credit is given for each subtest passed at the upper age levels. The mental age of a pupil is calculated on the basis of these scores. Like the previous revisions the examiner determines the basal age first and adds to this the credit earned by the pupil between the basal age and the ceiling age. By ceiling age is understood the lowest age at which the pupil cannot pass even a single subtest. We have already described how I.Q. was computed in previous revision. But in this 1960 revision mental age is used for calculating the "Deviation I.Q." instead of ratio I.Q. They have prepared one "Examiner's Manual" from which table it is easy to find out the respective Deviation I. Q. for each mental age level.

In the 1960 revision they used the same "standardisation data" which they used in the 1937 revision. The reliability and validity of the test in this revision were calculated from the same "standardisation data." They found .90 as the reliability co-efficient of the test but the validity varied from time to time according to the nature of the criterion used. The co-efficient of correlation between the test scores and the elementary school performance was found to be .70. This co-efficient ranges from .50 to .60 when correlated with high school performances and between .30 to .50 with college performances.

This revised version of the test measures general ability rather than specific abilities. In this revision also the verbal nature of the test items has not been removed. As standardisation group it took white American children from middle-class families of the urban areas of the U. S. A. This test is also not appropriate for adult individuals. It is very difficult to determine the ceiling age of bright adults with this individual test.

Again, it was not possible to test large number of adult subjects in order to make it a suitable standardised test for adult population.

I. Q. as a Standard Score or Deviation I. Q.

Some psychologists have found it convenient to convert raw scores into standard scores, by taking 100 as the new mean of the standard score distribution and 15 as the adopted σ' (Standard Deviation), instead of expressing them into simple I.Qs.

They use the following formula for the calculation of the standard score.

$$X' = \frac{\sigma'}{\sigma}(X - M) + M'$$

where

X' = Standard Score to be calculated in the new distribution.

X = Original score as obtained by applying the test.

σ' = Standard Deviation of the new score distribution which has been adopted. (15 as stated above.)

σ = Original SD as obtained in the original score distribution.

M' = Mean (new) of the Standard Score distribution. (100 as stated above.)

M = Mean of the original score distribution. (Mean of the age group in the intelligence tests.)

These calculated new scores are often called "Deviation I.Qs" i.e., "raw scores are converted into standard scores in a distribution with a mean of 100 and a" SD of 15.

The Wechsler Test

The Wechsler-Bellevue Intelligence Scale or W-BIS.

The Binet-Simon Scale was prepared in order to measure general mental ability of students. But those tests were of very little use to clinical psychologists. They were in need of some reliable tests in order to diagnose strengths or weaknesses of a man in any particular field of knowledge and to get an idea of the mental disposition of mental patients. They were feeling want of some general intelligence tests suitable for persons of higher age groups. Such tests are necessary both for

the guidance work and for the diagnostic purposes. Binet-Simon tests were planned for young children and they are frequently used by psychologists and teachers for measuring intelligence of children, adolescents and young adults.

In order to overcome these difficulties, Wechsler designed a test known as Wechsler-Bellevue Intelligence Scale. Wechsler was a clinical psychologist in the Bellevue Hospital of New York. In discharging his official duties he had to measure intelligence of criminals and other patients in order to determine whether they were feeble-minded, neurotic, psychotic or of sub-normal intelligence. Binet wanted to find out school children possessing higher abilities and to separate them from students of less ability. Both of them wanted to measure abilities of average and below average—group but no special emphasis was laid on the higher levels of mental ability.

About Binet-Simon Scale Wechsler¹ made following remarks—Binet tests "have not been standardised on a sufficient number of cases. Indeed most of them were never standardised on any adults at all." "Many of the test items do not seem to be of the sort that would either interest or appeal to an adult." "Apart from the matter of interest and appeal, there are other serious objections to the type of material generally employed in children's tests which make them unsuitable for adult use." "Another limitation to the use of tests on adults, originally standardised on children, is that many of these tests lay altogether too much emphasis on speed as compared to accuracy."

Wechsler studied many cases of adults of advanced ages and tried to determine normal performance of an average adult. He could not accept the idea that all average adults of older ages possess the same mental power as that of age 16. He, however, contributed to the idea that performance of an average adult begins to drop at 20. According to him if the performance at the age of 16 is accepted as the normal performance of an average adult then an average adult of 50 years old will have an I. Q. of about 75.

1. David Wechsler—The measurement of adult intelligence. Baltimore, Williams and Wilkins 1944, pp. 15-18.

Description Of The Test.

The term W-BIS is generally used to represent the Wechsler-Bellevue Intelligence Scale. It is an individual intelligence test.

In 1939, Wechsler published his first test and it was named as Form I. During the second world war the Army was in need of a parallel intelligence scale for use in Army hospitals. So he prepared the Form B of his test for the use of army psychologists. Again in 1946, he published the Form II of the test. In this Form II he included large number of test items from his Form B. His tests are used by a large number of clinical psychologists. Now-a-days many psychologists are using his tests for measuring intelligence of adults also. Researches are still being carried on for making them suitable for very young children. Binet's test is an age scale whereas Wechsler's test is a point scale.

In the W-BIS some points are given for the successful completion of each item. All the points earned by an individual are added to determine his total scores. Wechsler has prepared a norm table. With the help of this table the scores earned by an individual can be converted into Wechsler I.Q.

His standardisation group consisted of 1700 persons. He selected his sample from people engaged in different occupations. Wechsler selected his sample from persons residing in the New York city and New York State. So according to many persons this sample cannot be regarded as the true sample of the whole American population.

There are two parts in the Wechsler-Bellevue Scale. The first part is a verbal scale and the other part is a Performance Scale. In the verbal scale there are 5 subtests and one alternative subtest. In the Performance Scale there are 5 subtests. So altogether there are 11 subtests for measuring different types of behaviours. In the verbal scale language is used in solving problems but in the Performance Scale no language is used in solving problems. In the second part of the scale language is used only in giving directions.

From the scores of the verbal scale one can get the "Verbal I.Q." and from the Performance Scale one can calculate the

"performance I. Q." By adding both the abovementioned I. Q's one can determine the "total I. Q." also.

The Verbal Scale.

The verbal scale includes five regular tests and one alternative test. They are tests of General Information, Comprehension, Digit Span (Forward and Backward), Similarities, Arithmetic Reasoning and Vocabulary (alternate). Originally the Vocabulary test was prepared as an alternative test but in course of time it has been found to be very useful and it is now administered as a regular and essential part of the whole test.

1. General Information tests consist of 25 test items concerning some general information which are presumed to be known to all average adults. Questions such as "How many weeks are there in a year?" "What does rubber come from?" are asked.

2. Comprehension tests consist of 10 regular questions and two alternative questions. Subjects are asked to give generalised answer from their own common sense, knowledge and practical judgment. One of the test items is "Why are shoes made of leather?"

3. Digit Span tests require the subject to repeat some arithmetical digits either in the forward or in the backward direction as soon as they are presented orally to him. "Three-to-nine-digit numbers" are presented to the subject orally and he is asked to repeat them. These tests measure the "memory span" of the subject.

4. Similarities tests consist of 12 pairs of words. Two words of each of the word-pairs are alike in some respect i. e. they have some similarities. The subject is asked to say how they are alike. Questions may be like the following: ear and nose, pen and pencil, etc.

5. Arithmetic Reasoning tests consist of 10 arithmetical problems which are to be solved mentally. In these tests the subject is not allowed to use any paper or pencil. These verbal arithmetic problems aim at measuring the subject's numerical reasoning ability. The subject is to solve each problem within a reasonable time.

less complex than the Binet test because same types of test items are grouped in one place instead of grouping different types of test items in one place. It is possible to study more accurately behaviour pattern and personality characteristics of a subject by the Wechsler test. Performance items help to determine personality characteristics whereas similarities and comprehension items help to notice thinking habits.

The Wechsler-Bellevue Scale can be used by teachers and counsellors easily. When the full scale is applied it may give us an idea of the present mental ability of the subject. Though not very conclusive the difference between the verbal I.Q. and Performance I.Q. may help an Educational and Vocational Counsellor to say whether the subject is academic minded or non-academic minded.

This scale is very useful in the field of clinical psychology. By applying Wechsler test side by side with other psychiatric examinations it may be possible to classify different types of mental patients into different and distinct groups. It has been observed by many research workers that in many cases of "Organic brain damage, neurosis and schizophrenia" Wechsler's Verbal I.Q. is higher than his Performance I.Q. Again they noticed that in cases of "adolescent psychopaths and mental defectives" the Verbal I.Q. is generally lower than the performance I.Q. Wechsler's I.Q. can help a clinical psychologist to determine whether a young criminal is a feeble-minded person or an average one and is behaving badly owing to some emotional blocks.

Different types of mental patients respond differently to subtests. It is known that brain surgery is very helpful in some cases of psychosis but are less helpful in other cases. After administering this test on a large number of patients for a considerably long period of time and noticing the responses of a particular type of patients to this test it may be possible on some future date to tell what type of patients will recover by shock therapy or by brain surgery or by psychoanalysis.

From the scores of 10 or 11 subtests of Wechsler test profiles can be drawn. Patient and prolonged observation

may give an idea about the nature of different mental functions which are necessary for correct response to each subtest. There will be some peaks and valleys in the profile. Of course a duly qualified person will be required for correct interpretation of the profiles. It has been noticed by a few persons that from the scores on verbal tests of an abnormal subject it may be possible to predict something about his anxiety, ideas, pretentious verbosity and his many other deviations from normality. If an examiner notices the responses of such a person in performance tests he may notice whether the subject is working in a planned way or not, whether the subject lacks power of critical evaluation and due perseverance.

It has already been said that "low vocabulary means poor ability to deal with symbols." Vocabulary tests will tell us whether the subject received due schooling and can express himself well through language. If we see that the subject had been to schools but is unable to give response to vocabulary tests in an expected way then it may lead us to think that his behaviour is being handicapped by emotional disturbances. But it should not be taken for granted in all cases.

As regards the Similarities tests it has been said that in these tests a subject is to use his power of reasoning and stock of information. It has been noticed by some people that in cases of "organic brain damage" scores in vocabulary tests are generally higher than "Similarities test".¹

Reliability and Validity of the Wechsler I. Q.

Wechsler's I. Q. has been found to be considerably reliable. In a study, the Wechsler test was applied to 355 subjects and by applying the split-half method the reliability coefficient was found to be .90. Again by applying test-retest method it was found to be .94. So this test can be accepted as an accurate and reliable test.

In order to determine the validity of Wechsler's I. Q. his test scores were correlated with the scores of other tests.

1. W. R. Reynell—"A psychometric method for determining intellectual loss following head injury." *J. Ment. Sci.* 1944, 90, 710-719.

Correlation between Wechsler I.Q. and Stanford-Binet I.Q. varies from .80 to .93.

Wechsler Test Vs Stanford Binet Scale

1. In Wechsler test similar test items are grouped in the same subtest. But in the Stanford-Binet Scale different types of test items are grouped in the same test in order to make it suitable for a particular age group.

2. Wechsler I.Q. is a standard score with an assumed mean of 100 and a S. D. of 15. Stanford-Binet I.Q. is a ratio of M. A. to C. A. $\left(\frac{MA}{CA} \times 100 \right)$.

3. There are three I.Q.s in the Wechsler Test. (Verbal I.Q., Performance I.Q. and total I.Q.). In the Stanford-Binet scale there is only one I. Q.

Wechsler Intelligence Scale for Children of 1949 (WISC)₁

The Wechsler Intelligence scale for children was published by David Wechsler in 1949. The WISC is more or less a revised version of the old Wechsler-Bellevue Scale. It has been revised with a view to making it still more suitable for younger children. Ten subtests and two alternative tests have been included in the WISC. The subtests are almost same as the W-BIS but there are some additions and alterations. There are five subtests in the Verbal Scale and five subtests in the Performance Scale. They are as follows :—

WISC

Verbal Test

- a. Information.
- b. Comprehension.
- c. Arithmetic.
- d. Similarities.
- e. Vocabulary
(Digit Span)

Performance Test

- a. Picture completion.
- b. Picture Arrangement.
- c. Block Design.
- d. Object Assembly.
- e. Mazes (or Coding)

This test has been prepared for subjects from ages 5 to 15. The standardisation sample was collected from eleven states.

1. Psychological corporation. New York, 1949,

and 55 mental defectives were collected from three schools for the feeble-minded. Therefore the sample represented children from all geographic areas, urban and rural areas and children of parents of different occupational levels. In the verbal scale the subtest group Digit-Span was found not suitable for children, so it was turned into an alternative test and the vocabulary test has taken its place. In the Performance scale the Digit-Symbol test seemed to be difficult for young children. So it has been replaced by the Maze or Coding test. The Maze test is a new addition. The author has provided a key or table from which the "reading of scale score equivalents to raw scores" for every 4 months from ages 5 to 15 years may be calculated. Here also the weighted scores are added and converted into "deviation I.Q.s" just like the W-BIS. It is estimated that about 50 per cent of school children will have WISC I.Q. between 90 and 110. Reliability coefficients for the WISC ranges from .92 to .95.

Wechsler Adult Intelligence Scale (WAIS)

This test was published by David Wechsler¹ in 1955. The WAIS is a revision of the old W-BIS but a few new items have been added to the old scale. The standardisation sample represented people from all parts of the country and people from all walks of life. The author has supplied a manual. Norms are calculated from ages 16 to 20 with two-year intervals and from ages 20 to 75 with five years intervals.

Test items of the WAIS are arranged in the following way.

WAIS

<i>Verbal Scale</i>	<i>Performance Scale</i>
a. General information.	a. Picture Arrangement.
b. Comprehension.	b. Picture completion.
c. Digit Span.	c. Object Assembly.
d. Similarities.	d. Digit Symbol.
e. Arithmetic.	e. Block Design.
f. Vocabulary.	

1. Psychological Corporation, New York.

Scores of the verbal and performance scales are converted into scaled scores. These scaled scores for the Verbal and Performance scales are totalled separately and transferred into "deviation I. Q." independently. Here also it is possible to calculate a Verbal I.Q., a Performance Scale I.Q and a Total I.Q.

Group Tests of Intelligence.

Group Testing.

There are some intelligence tests which can be applied to a group of subjects at a time. These tests are known as group tests of intelligence. Group tests are preferred to individual tests because of their practicability, acceptability, availability of trained personnel, economy of time and money. It is possible on the part of the teachers to administer group tests in their regular class period. Now-a-days teachers, parents and other members of the society accept group tests of intelligence as valid psychological tests. In various other fields such as in the army, navy, research, industry and commerce group tests are very generously applied.

Group intelligence tests are almost like individual intelligence tests but they are applied to a group of pupils like ordinary school examinations. Here the subject is to answer questions either by putting a check mark (\checkmark) or encircling a letter or a number or choosing an answer from several alternatives. All responses are objectively scored according to definite rules laid down by the test-maker.

Group tests can be verbal tests or non-verbal tests. Verbal group tests invariably use language. Questions are generally Verbal, that is questions are expressed either in words or in numbers. In non-verbal tests questions are expressed through pictures, symbols or diagrams. In this type of test language is avoided as far as possible but the directions are given through language. In answering these tests very little language or reading is necessary. For pre-school and first-grade pupils non-verbal tests are most suitable. A mixed test consisting of both Verbal and non-Verbal items are suitable for students of elementary and junior schools. A test consisting of Verbal numerical and abstract items is suitable for students of high schools and colleges.

Non-verbal group intelligence tests are widely used in industry and in special circumstances. These tests demand very little knowledge of language and reading ability because test items are non-Verbal. These tests are suitable for subjects who are either linguistically or otherwise handicapped. They are also useful in cases where the subjects are illiterates, foreigners and are students of non-academic type of schools. In some cases non-Verbal tests are used as a part of diagnostic tests. For intercultural comparisons non-verbal tests are very helpful.

In individual tests questions are asked orally and the subject gives answers to them orally. Sufficient time is given to the subject to answer questions in individual tests. But in group tests the time for giving responses is limited and predetermined. Most of the group tests are speed tests. But there are some group intelligence tests which call for both power and speed. Modern psychologists are in favour of giving sufficient time to the subject so that he can finish all the test items within the time limit.

Group tests are administered as far as possible under uniform or identical conditions. So these tests can be conveniently used for prediction purposes.

Group tests, like individual intelligence tests, are designed to measure innate abilities of the subject. Both the tests try to avoid the effects of school learning and training. A large number of intelligence tests lay emphasis on mental alertness of the subject. Test items are generally concerned with the power of reasoning, numerical ability, spatial ability, generalisation and manipulation of geometric forms or ideas. Most of the group intelligence tests are printed and presented in a booklet form.

Group intelligence tests were used for the first time during World War I (1914 to 1918). Two group intelligence tests known as Army Alpha and Army Beta were prepared at that time. Army Alpha is a verbal group intelligence test whereas the Army Beta is a non-verbal group intelligence test. There are eight sub-tests in the Army Alpha Test of the following nature.

“(a) Following Directions, (b) Arithmetic Problems,

(c) Disarranged Sentences, (d) Best Answers, (e) Number Series Completion, (f) Same-Opposites, (g) Analogies, and (h) Information.”

In the non-verbal test Army Beta, a few pictures and diagrams are used as test items. Directions are given in pantomime.

During the World War II (1939-1945) another group intelligence test known as the Army General Classification Test or AGCT was prepared in order to measure general ability of recruits. In this test, items are arranged in order of graded difficulty instead of arranging them into sub-tests. Later on a new form of the AGCT, suitable for civilian population, has been prepared.

Group intelligence tests are useful in getting an over-all picture of an individual's abstract ability which is necessary for counselling and guidance work, and for prognosis. Group intelligence tests are in no way less reliable than individual intelligence tests. Various criteria have been used by test designers for validating group intelligence tests. School examination marks, teachers' ratings, ratings made by experts for different abilities, actual performances in a particular job or other intelligence tests are generally used as validating criteria by test makers.

Different scoring methods have been adapted by test makers in preparing various group intelligence tests. Large number of psychologists prefer point scale. One or more points are given for each correct answer. When the subject finishes the whole test all the points achieved by him are added together in order to get at his total score.

Limitations of Group Intelligence Tests.

The following are the most important limitations of group intelligence tests.

1. Group intelligence tests are not so useful for subjects who are suffering from reading difficulties or suffering from partial loss of sight. For blind pupils also they are ineffective.
2. Only certain kinds of abilities can be tapped by group intelligence tests. It is very difficult to prepare group tests for measuring insightful thinking, originality and the like.

3. A subject may not understand a test item and may require some clarification. In an individual test it is possible to explain the meaning of a question, if not understood, but it is not possible in a group test. Again a timid subject may suffer from inhibition. In individual tests an examiner may establish rapport with such a subject easily and can help him to overcome his inhibitions. But in a group intelligence test it is hard to establish such rapport.

4. Scores obtained by applying group intelligence tests on several occasions will be the same or reliable and valid if they can be administered under uniform or identical conditions on all occasions.

5. Clinical psychologists generally prefer individual intelligence tests to group intelligence tests. They want to gather more detailed information regarding the subject's emotional make up, handicaps, mental complexes and so on.

There are several other minor limitations of group intelligence tests.

Examples of a few Verbal and Non-Verbal group intelligence tests are given below.

Verbal Group Intelligence Tests.

- a. The California Short-Form Test of Mental Maturity (CTMM).
- b. Otis Quick-Scoring Mental Ability Tests.
- c. Kuhlmann-Anderson Intelligence Tests.

Non-Verbal Intelligence Tests.

- a. Lorge-Thorndike Intelligence Tests.
- b. The Pintner-Cunningham Primary Tests.
- c. A few Performance Tests.

Verbal Group Intelligence Tests.

1. The California Short-Form Test of Mental Maturity (CTMM).

A Long Form of the California Test of Mental Maturity was prepared as early as in 1920. Since then this test has undergone several revisions and modifications. This test was revised in 1963 by E. T. Sullivan, W. C. Clark and E. W. Tiegs and was published by the California Test Bureau. This revision is known as the California Short-Form Test

of Mental Maturity. This Short-Form can be administered in a single class period. The Short-Form of the CTMM has been prepared by shortening the longer form.

This Short-Form of the CTMM has been devised for evaluating functional capacities which are essential in the process of learning new things, facing new situations and in problem solving. This test battery is applicable to pupils of the following six levels.

Pre-primary (Kindergarten & first grade) ...	0.	level.
Primary ...	...	1st. level.
Elementary ...	...	2nd. level.
Junior High School ...	...	3rd level.
Secondary High School ...	...	4th level.
Advanced pupils ...	...	5th level.

Test items are grouped into several subtests for measuring the following five factors : memory, spatial relations, logical reasoning, numerical reasoning and verbal concepts.

Test items belong to following Categories.

- | | |
|------------------------|------------------------------------|
| 1. Memory | { Immediate Recall. |
| | { Delayed Recall. |
| 2. Spatial Relation | { Sensing Right and Left. |
| | { Manipulation of Areas. |
| | { Foresight in Spatial Situations. |
| 3. Logical Reasoning | { Opposites. |
| | { Similarities. |
| | { Analogies. |
| | { Inference. |
| 4. Numerical Reasoning | { Number Series. |
| | { Numerical Quantity. |
| | { Numerical Quality. |
| 5. Verbal Concepts | —Vocabulary. |

Some of the test items are verbal and some are of non-verbal nature. One and half hours time is required to administer the test battery. But varying times are required for different levels. For 0 level the time required is 48 minutes whereas 90 minutes are required for level 5. Scoring can be done either by hand or by machine. Individual scores can be given for each of the 5 areas or factors as the test items are divided into

5 sub-tests. Again scores can be given separately in the language or verbal tests or in the non-verbal tests or in the whole test.

A manual is available. The manual indicates Mental Ages corresponding to different scores obtained by subjects. I. Q. is obtained by dividing the M. A. of a subject by his C. A. I. Q. can be calculated separately for verbal tests, non-verbal tests and for the total tests. PR (Percentile Ranks) for each of the 5 areas are available. Profiles with scores in five separate areas are also available. These profiles are very helpful to Guidance Officers.

Stanford-Binet test and similar other mental tests have been used as validating criteria. The reliability co-efficient has been reported to be satisfactory. Therefore it is a valid and reliable test.

2. Otis Quick-Scoring Mental Ability Tests.

This battery of tests was prepared by Arthur S. Otis in New York. The Otis Quick-Scoring Mental Ability Tests contain both verbal and non-verbal reasoning test items designed to measure general mental ability. This test battery is very widely used by educational counsellors for classification of pupils and for evaluating their scholastic achievements. The special feature of this test battery is that the test items are not placed into separate groups. These tests consist of items such as analogies, arithmetic problems, opposites and so on. Instead of grouping the items according to the type to which they belong they are presented "in a continuous repetitive pattern", that is a number of items of a particular type are presented at certain intervals, throughout the whole test. This arrangement of test items is called by some psychologists "a spiral omnibus arrangement" or "a scrambled" test. However the test items are arranged in order of graded difficulty.

There are three forms of this test battery : Alpha Test consisting of 90 non-verbal test items for children of grades 1 to 4 ; Beta Test consisting of 80 verbal, numerical and spatial test items for children of grades 4 to 9 ; and Gamma Test consisting of 80 verbal (mostly) test items for children of grades 9 to 12. About 40 minutes time is required to administer this test. It is easy to administer and score this test battery. A manual

is available. All directions and instructions are given in the manual. Scoring can be done either by hand with the help of a punched stencil or IBM. Its low cost, ease of administration and scoring, and availability of test forms for different levels have made it very popular amongst the teachers and counsellors. It is a good measuring tool of mental abilities of pupils.

There is a table in the manual from which it is possible to calculate "Mental Age" and to get an "I.Q.-like" score. This Otis I.Q. is a deviation score and it indicates a child's brightness. This I.Q. is not equivalent to Stanford-Binet I.Q.

School achievement records have been used as validating criteria and the coefficient of correlation ranges from .55 to .89. The Split-half method of Spearman-Brown has been adapted for determining the reliability of the test battery. The reliability co-efficient of this test battery has been reported to be high.

3. Kuhlmann-Anderson Intelligence Tests.

The Kuhlmann-Anderson Intelligence Test was prepared by F. Kuhlmann and R. G. Anderson and was published by the Personnel Press, INC, Princeton, N. J. There are thirty-nine separate sub-tests in this test battery. These thirty-nine sub-tests are grouped into nine test batteries suitable for pupils from grade I to grade XII. Another test battery has been prepared for pupils of the Kindergarten stage. The sub-tests are printed in separate test booklets. Same group of test items are included in two or three sub-tests.

Sub-tests 1-10 are meant for Kindergarten.

Sub-tests 4-13 are meant for Grade I

Sub-tests 8-17 are meant for Grade II

Sub-tests 12-21 are meant for Grade III

Sub-tests 15-24 are meant for Grade IV

Sub-tests 19-28 are meant for Grade V

Sub-tests 22-31 are meant for Grade VI

Sub-tests 25-34 are meant for Grade VII-VIII

Sub-tests 30-39 are meant for Grades IX-XII.

It is a bit difficult to administer and score this test battery. Authors have applied "median mental age" method of scoring answer papers. A manual is available. Since its

construction this test battery has undergone several modifications and revisions: Its 6th edition was published in 1952. The seventh edition was published in 1960. In this edition everything has been printed in two booklets named as G and H. The booklet G is suitable for pupils of junior high schools and the booklet H is suitable for pupils of senior high schools. In each of the booklets there are eight tests of which four are Verbal (V) and other four are Quantitative (Q). The scores secured by a pupil in the V-tests and Q-tests are added together in order to determine his total (T) score.

Norms have been supplied. The manual shows the grade percentile ranks for the verbal, quantitative and total scores. Another have shown the method for calculating the Deviation I. Qs. Validity figures range from .90 to 0.95. Reliability co-efficients have been reported to be very high.

Non-Verbal Group Intelligence Tests

1. *The Pintner-Cunningham Primary Test.*

This test battery was published by the World Book Company, Yonkers-on-Hudson, N. York. There are seven sub-tests of non-verbal type in this test battery. The Pintner-Cunningham Test battery is suitable for younger children (Kindergarten to Grade II). Three equivalent forms A, B and C of this test battery are available. Seven non-verbal sub-tests are of the following types.

(a) "Common Observation." The subject is shown pictures of several objects printed in a sheet of paper. Some of the objects shown belong to the same category. The subject is to point out those objects which belong to the same category.

(b) "Aesthetic Differences". In these items several groups of pictures are shown to the subject. Each group consists of 3 slightly changed or a little bit differently drawn pictures of the same object. The subject is to show the "prettiest" of the three pictures in each group of pictures.

(c) "Associated Objects". Pictures of different objects drawn in rows are shown to the subject. In each row there are pictures of two things which are "associated", or "belong together". The subject is to point out those two objects that "belong together". (e. g. pen and pencil.)

(d) "Discrimination of Size." —Some pictures of common clothings and household articles, such as, a hat, a coat, shoes, gloves etc. are shown to the subject. Some of the pictures are very big, some are proportionate or of right size and some are very small. A picture of a person is also shown. The subject is to point out which of those articles will be of the right size for the person shown in the picture.

(e) "Picture Parts." In this subtest several pictures of objects belonging to a particular group of articles are drawn at different places. The subject is to point out the pictures of objects which belong to the same group.

(f) "Picture Completion." —In this subtest several incomplete pictures or pictures with some of their parts missing are shown to the subject. The subject is to mark or point out those missing parts correctly.

(g) "Dot Drawing." —Here some pictures are drawn by connecting some dots on a printed dotted paper (Resembling an ordinary graph paper). Another similarly printed dotted paper having no picture drawn in it is given to the subject. The subject is to draw exactly similar pictures in his blank dotted paper by joining some of the dots.

All the test items are of non-verbal type. All the seven sub-tests can be separately scored. They may be added together to calculate the total point score. A manual is available. Authors have shown a method for determining M. A s. When this M. A is divided by C. A of a particular individual we get his I.Q. But Pintner-Cunningham I.Q s are not equivalent to Stanford-Binet I.Q s.

2. Lorge-Thorndike Intelligence Tests.

The Lorge-Thorndike Intelligence Test battery was prepared by I. Lorge and R. L. Thorndike and was published by the Houghton Mifflin Co, Boston, in 1957. There are tests for five levels, beginning from the kindergarten to the 12th grade. There are two equivalent forms for each level. Test items for levels 1 and 2 are of non-verbal type. A few verbal items and a few non-verbal items are included in tests for levels 3, 4 and 5.

Reliability co-efficients have been stated to range from .88 to .94. It has been found to be a valid group intelligence test.

Performance Tests.

Psychometric tests are generally verbal in nature. In such tests the stimulus is given through some words or mathematical symbols. The subject is to manipulate these words or mathematical symbols in order to give his responses correctly. There may be some subjects who do not know words and are unable to follow directions given through a foreign language, or there may be some subjects who are deaf. So there should be some tests which are of non-verbal nature, where the subject is required to interpret some pictures by matching one picture with another, to arrange a few blocks for preparing a definite design, to fit some cut pieces into some holes of various shapes made in a bigger board, to place a few pegs into different holes made on another board and so on. Some how or other the subject is to perform something in order to give his response. These tests are prepared to measure general mental functioning or ability of children. These non-language tests are known as Performance Tests. Performance tests help us to measure some mental traits and to some extent intelligence too. Items of performance tests may be prepared to measure mechanical aptitude and manual dexterity also. Such tests are very often named as aptitude tests. Performance tests are very fruitfully used in clinical psychology to detect feeble-minded children.

A few performance tests have been included in the Stanford-Binet Scale and in the Wechsler Scale. Common examples of Performance tests are Mankin Test, Koh's Block Design, Form-board tests, Porteus Maze Test, Cube Imitation Test, Substitution Test, Picture Completion, Draw a Man Test, Knox Cube Test and so on. Norms for performance tests are also available.

Advantages of Performance Tests.

Performance tests help us to study mental functioning of children who are owing to various reasons handicapped and

are unable to respond to verbal tests. They are found to be very good supplements to Stanford-Binet Test and similar other intelligence tests.

Performance tests are very useful for clinical observation. A few investigators have found that low performance test scores give us clues to the study of emotional instability and of behaviour problems. It is suspected that poor perceptual ability and poor attention span of problematic and emotionally unstable children generally lower down their performance test scores. The existing belief is that emotional instability brings out unusual responses.

Performance tests are occasionally found to be useful by research scholars for their research work.

In several adult studies it has been observed that different mental abilities of human beings seem to decrease at different rates after the attainment of maturity. It is said that test scores on verbal tests remain stable upto age 30 whereas scores on performance tests begin to decrease in early adulthood. Therefore performance tests help us to study the rate of this decrease more accurately¹.

Disadvantages of Performance Tests.

Most of the performance tests are individual tests or can be applied to a small group of children at a time. So they are much time consuming.

Scores obtained by applying a single performance test may not be so reliable. From the nature of their construction it seems that different performance tests measure different aspects of mental ability. So in order to get an idea of the full picture of mental abilities of a subject it is necessary to apply a few performance tests or a battery of tests at a time. This will make performance tests uneconomic.

Again many psychologists are of the opinion that the intelligence measured by verbal tests and by performance tests are not exactly same. It has already been noticed that the correlation between Wechsler's Verbal scores and performance scores was .83. Had the intelligence measured by the Wechsler's verbal test and performance test been same this correlation would be perfect i.e. it would be equal to +1.

1. Weisenburg, Theodora, and others. Adult intelligence. New York : Commonwealth Fund, 1936.

General mental ability of inferior and younger children are better measured by the performance tests than older and superior children.

Some of the widely used performance tests are described below.

1. The Pintner-Paterson Scale of Performance Tests. (1917).
 2. Arthur Point Scale of Performance Tests.
(1930 revised ed. 1947)
 3. Cornell-Coxe Performance Ability Scale. (1934).
 4. Chicago Non-verbal Examination.
 5. Pintner General Ability Tests : Non-language Series.
 6. Draw-a-Man Test of Goodenough.
 7. There are several other Performance Tests such as Porteus Mazes, Block Counting, Block Design etc. etc.
 8. Alexander's Pass Along Test.
4. *Pintner-Paterson Scale of Performance Tests.*

The first Pintner-Paterson battery of performance tests was published in 1917. This test battery was widely used for long years. This scale was revised and abbreviated in 1937. There are 15 sub-tests in this scale and is applicable to children of ages from 4 to 16. Following subtests are included in the Pintner-Paterson Scale of performance tests.

1. Mare and Foal Test.—In this test a picture of a farmhouse showing a mare and a foal in it is cut into 11 pieces. The subject is required to assemble those cut out pieces into a whole picture of the farmhouse. The maximum time allowed is 5 minutes. Credit is given both for speed and correctness. Number of errors committed are taken into account. This principle of marking is followed upto the 11th item.

2. Seguin Form Board.—This test consists of a board measuring $20 \times 14\frac{3}{8}$ inches. Ten apertures of definite geometrical shapes have been cut out from the board. There are a few cut out pieces to fill up those blanks. The subject is asked to fit those cut out pieces into proper apertures.

3. Five Figure Form Board.—This is almost like Seguin Form Board Test but a bit difficult one. There are only 5 apertures in the main board whereas there are 11 cut out

pieces. All the 11 cut out pieces are to be fitted in those 5 apertures.

4. Two Figure Form Board.—It is almost like the Five Figure Form Board Test but a bit easier.

5. Causist Form Board.—This is almost like the above two tests but there are only 4 holes. The subject is required to fit 12 cut out pieces into 4 holes.

6, 7 & 8. They are all From Board tests having varying number of holes and cut out pieces.

9. Manikin Test.—In this test a doll is divided into 6 different parts of its body. The subject is to assemble the different parts of the doll.

10. Feature Profile Test.—A feature profile is divided into 8 pieces. They are to be rearranged in order to get the profile again.

11. Ship Test.—In the Ship Test a picture of a ship is divided into 10 rectangular pieces. These 10 rectangular pieces are to be fitted together for making the full picture of the ship.

12. Picture Completion Test.—In this test 10 square cut out pieces have been removed from a picture showing a rural scene. A good number of square cut out pieces of pictures some of which are suitable for filling up those blanks are supplied. The subject is to select suitable cut out pieces for filling up those blanks within a limited time.

13. Substitution Test.—In this test there are some geometrical figures which are to be marked according to given directions. About 50 figures are to be marked.

14. Adaptation Board.—It consists of a board having 4 round holes and a few round blocks. The subject is required to fit those blocks into right holes.

15. Cube Imitation Test.—There are "5 black 1-inch cubes". Four of these cubes are placed before the subject. The tester takes the fifth cube and taps other four blocks with this block in different orders. The subject is to note the order of tapping and repeat it just after the tester.

Pintner-Paterson Scale is a point scale. In most of the test items speed is regarded as an important factor. Emphasis is

given to "manipulative dexterity" and memory span too. Percentile scores have been calculated for each level.

B. Arthur Point Scale of Performance Tests.

Arthur Point Scale of Performance Tests can be applied individually. This scale is suitable for ages from $4\frac{1}{2}$ years to superior adults. There are 10 subtests in this scale. Arthur adapted a few subtests from the Pintner-Paterson Scale and restandardised them. In addition of those subtests which she adapted from Pintner-Paterson Scale, Arthur introduced a few other performance tests in her scale. These newly added subtests are the Porteus Mazes, the Koh's Block Design Test, various form boards and block counting tests.

Porteus Maze Test (Porteus 1915 and 1924).

There are 11 mazes of increasing difficulty suitable for subjects from 3 years level to adult level in the Porteus Maze Test. These Mazes are drawn in papers and are arranged in order of difficulty. The subject is given a pencil. The subject is asked to trace the shortest route from the entrance to the exit in the maze with the pencil. He is not allowed to lift the pencil from the paper. He must not cross any line in the maze or enter into a wrong pathway. If he crosses any line or enters into a wrong pathway, the maze is taken away and a second trial is given. So he makes the second attempt. From ages 3 to 11 two trials are allowed but for the older levels four trials are allowed. If a subject can perform the job accurately in the first trial he is given more credit than a subject who attains success on successive attempts. No time limit is imposed in this test because less emphasis has been given to the speed factor. But one should finish the test prudently and carefully within a reasonable period of time.

The Koh's Block Design Test.

There are 17 cards depicting 17 designs in the Koh's Block Design Test. One of the designed cards are presented to the subject at a time. There are some movable and coloured cube blocks fitted to a box. The subject is to move the coloured cube blocks this way, or that way in order to prepare the given design. He is not allowed to remove or lift those cube blocks from the

box. Those cube blocks are almost identical. Four sides of all the cube blocks are coloured white, red, yellow and blue respectively. Other two sides of the cube blocks are divided horizontally. Of those two sides one half of one side is coloured red and the other half is coloured white. Similarly one half of the remaining side is coloured blue and the other half is coloured yellow. The subject may require 6 to 16 coloured cube blocks in order to prepare more difficult designs. Koh's Block Design Test is widely used by the teachers and clinical psychologists.

The Arthur Point Scale is very popular in the elementary schools. This scale of performance test was first published in 1930. It was revised later in 1947. The revised scale is naturally better than the original scale as regards standardisation and scoring. In the revised form of the scale the test maker suggested to include mainly the following five tests.

(a) Knox Cube.—It consists of 4 cubes which are tapped by the examiner in various orders. The subject is to mark the tapping order and to repeat the process just after the examiner.

(b) Seguin Form Board Test.—Described in the Pintner-Paterson scale of Performance Scale.

(c) Porteus Maze Test.—Described before hand.

(d) Healy Picture Completion II.—Already described.

(e) Arthur Stencil Design Test.—Some standard designs are drawn in different colours on a few cards. Several small and coloured stencils showing different portions of those designs are also prepared. The subject is required to assemble together those small coloured stencils in order to reproduce those standard designs. Many stencils may be necessary for reproducing a complex design.

It is a point scale. All the scores achieved in the sub-tests are added together and are transferred into mental ages. Arthur suggested a method of calculating Arthur Scale I. Q by dividing the Mental Age by Chronological Age. He determined the M. A in the following way. Suppose there is a representative sample whose chronological ages are 12 years and their average score is 32 points. Here 32 is taken to be the M. A of all children of 12 years. This M. A when

divided by the C. A. will yield the Arthur I. Q. or Performance I. Q. Arthur I. Q. is not equivalent to Stanford-Binet I. Q. but is regarded as a "performance supplement" to Stanford-Binet I. Q. It has been observed that for very dull children Arthur I. Q. is higher than Stanford-Binet I. Q.

C. Cornell-Coxe Performance Ability Scale.

There are 6 subtests and one "optional substitute for the third" subtest in the Cornell-Coxe Performance Ability Scale. Following types of subtests have been included in this Performance Scale.

- | | |
|------------------------------|-----------------------------|
| 1. Manikin Profile Test, | 2. Koh's Block Design Test, |
| 3. Picture Arrangement Test, | 4. Digit Symbol Test, |
| 5. Memory for Design Test, | 6. Cube Construction Test, |
| 7. Picture Completion Test. | |

D. Pintner General Ability Test : Non-Language Series.

Following types of subtests are included in this Pintner Non-Language General Ability Test.

- | | | |
|-----------------------|---------------------|-----------------------|
| 1. Figure Drawing, | 2. Reverse Drawing, | 3. Pattern-Synthesis, |
| 4. Movement Sequence, | 5. Manikin Test, | |
| 6. Paper Folding. | | |

E. Draw-a-Man Test of Goodenough.

This is a new-type test and has been found to be very useful by many. Goodenough claimed that Draw-a-Man Test will give some indication of general intelligence. In this test the subject is asked to draw a picture of a boy or of a girl from his imagination. A human figure is chosen in this test because it is known to everybody. He is to draw the picture on a piece of paper with a pencil. The examiner gives the following directions :—"On these papers I want you to draw a picture of a man. Make the very best picture that you can. Take your time and work very carefully." The examiner notices whether the subject has properly drawn the different parts of human body. Whether he has drawn legs, hands, nose, eyes, fingers etc. Generally no emphasis is given to artistic ability in this test. Different parts of human body, their proportions and perspective are taken into account for giving credit. In the scoring method points are given for drawing different

parts of human body and for the full view of the picture. Points obtained by subjects generally increase along with age. The total score is taken to be 51.

Clinical psychologists may use this test in order to get some idea about the emotional troubles of their patients.

Scoring tends to be subjective. But this subjectivity may be removed to some extent in the following way. Let all the answered papers be scored separately by more than two examiners and convert all the scores given by individual examiners into standard scores separately. The mean scores of all the standard scores of a subject will give a more objective score. Some experimenters tried to find out the reliability of this test. They found that the reliability of the test varied from .77 to .93.

Alexander's Pass Along Test.

Concrete intelligence is required to solve practical problems by performing some hand work. Concrete intelligence of a subject can be determined by Alexander's Pass Along Test. This test was devised by Alexander, a well-known psychologist.

A few rectangular blocks coloured red and blue, nine test cards and three trays of different sizes are there in this test. Some red lines are drawn on one side and some blue lines on the other side of each tray.

A few coloured blocks are placed on a tray. The subject is to move the red blocks towards the red side of the tray and the blue blocks towards the blue side. He will have to push the blocks but he will not be allowed to remove or lift the blocks from the tray. To start with the experiment the experimenter places the red blocks on the blue side and the blue blocks on the red side of the tray. Each of those test cards are presented to the subject one after another. The subject is to move those coloured blocks in order to match those nine test cards one after another. Definite time limits and scores for preparing each test card are predetermined.

When the subject performs the experiment the experimenter notices whether the subject obeys the directions given to him. The time taken by the subject to perform each item is recorded with the help of a stop watch. If a subject can perform an

item within the specified time he will get the maximum score. His score will be transferred into the standard score for comparing it with the norm of his grade or age. If the subject is unable to solve a single problem he will be shown how to solve that problem. In this way if the subject cannot solve successively two problems the experimenter will stop to proceed further. There is some maximum time limit for the preparation of each test card. If the subject takes unlimited time or exceeds the maximum time limit in solving those problems then also the experimenter will stop.

A "Scoring Chart" is available. If a subject takes more time in solving a problem than the stipulated time a few marks will be deducted from the full marks allotted to that particular item. When all the items are finished, all the individual scores obtained by the subject are added together to make up his total score.

Scoring Sheet for Alexander's Pass Along Test.

Problem No.	Maximum time limit	Score	Rules for Deduction of marks.
1.	2'	2	If the time taken is more than one minute, deduct one mark for each one minute, or its part.
2.	2'	3	If the time taken is more than one minute, deduct one mark for every 30 seconds, or its part.
3.	3'	5	
4.	3'	5	
5.	3'	5	
6.	3'	5	
7.	3'	5	If the time taken is more than one and a half minutes, deduct one mark for every 30 seconds, or its part.
8.	4'	7	
9.	5'	8	If the time taken is more than two minutes, deduct one mark for every 30 seconds, or its part.

Maximum score can be 45.

EXERCISES.

1. What are intelligence tests? How are they different from achievement tests? Discuss their relative importance to a guidance worker. C. M. C. 1967. W. B.
2. How can you distinguish intelligence tests from aptitude tests? Indicate their uses in educational guidance. C. M. C. 1968. W. B.

CHAPTER VI

Interest and Interest Inventories.

Meaning of Interest—Permanence of Interests—Relation of Interests to Values and Attitudes—Interest and Abilities—Assessment of Interests—Interest Inventories—Utility of Interest Inventories—Some Limitations of Interest Inventories.

All Educational and Vocational Guidance Officers should have fair knowledge of an individual's interest when he is to guide the individual to a particular branch of education or to a particular vocation.

Everyday an individual has to deal with many things which come before him. He is to deal with many people, objects and situations. A particular object may be interesting to one individual but not so interesting to another individual. A particular game may be favourite to a particular boy while others may not favour that game. An object may have some characteristics which make it interesting or uninteresting. One particular pupil may be liked or disliked by other pupils of his class. A few pupils may like him whereas others may not like him.

When an individual performs a job and finds it interesting, it can be said that he could appreciate and understand the good characteristics of the job and could very easily manage to get pleasure. A pupil will like a school subject if he can appreciate and understand that subject well. Music is interesting to those people who can follow and appreciate its rhythm, harmony and tones. Children like sweets because they are sweet to eat. A Scientist labours hard in his laboratory because he is encouraged by the hope of discovery. His aspirations may make his work interesting. Interest refers to the mental condition of an individual who likes and dislikes a thing and finds it pleasant or unpleasant.

Interest may be regarded as the excitement of one's feelings which create in him a tendency to choose a particular activity or object instead of some other alternatives, to like, observe, pay attention to, to think about and to enjoy that activity or object

in preference to others. Cronbach₁ defined interest "as a tendency to seek out an activity or object, or a tendency to choose it rather than some alternative". Mursell₂ said that "an interest may be described as a tendency to make consistent choices in a certain direction without external pressure and in the face of alternatives." Here the word object refers to people, institutions, things, beliefs and so on. An individual's interests are directed towards some activities or objects which generally satisfy his needs. Langer₃ said that "our interests are determined, for the most part, by a fusion of several needs. Activities that can offer satisfaction to many different needs at the same time will absorb our interests. In so far as the activity associated with an interest performs this function, we find it easy and enjoyable. When it fails to meet these requirements, we lack enthusiasm and find the activity a hard work."

Different psychologists tried to interpret interest in different ways. A few psychologists advocated that interest should not be regarded as a psychological entity but it should be taken as a concept. Super and Crites₄ (1962) suggested that interests can be interpreted in the following four ways.

- | | |
|-------------------------|----------------------------|
| 1. Expressed Interests. | 3. Tested Interests and |
| 2. Manifest Interests. | 4. Inventoried Interests." |

1. "Expressed Interests."—Through some verbal expressions an individual states what objects, work, institutions, things, beliefs or occupations are liked or disliked by him. These verbal expressions of likes, dislikes or indifferences fall under the category of expressed interests. Expressed interests may vary from person to person and in case of a particular individual from time to time. In cases of young children expressed interests change with maturity.

1. L. J. Cronbach—Essentials of Psychological Testing. P. 339 Harper & Brothers. New York. 1949.
2. J. L. Mursell. Psychological Testing. Longmans Green & Co. New York. 1950.
3. W. C. Langer. Psychology and Human Living, Appleton—Century Co. 1943.
4. D. E. Super and J. O. Crites. Appraising Vocational Fitness. rev. ed. Harper & Row. New York. 1962 pp 377-380.

2. "Manifest Interests."—When an individual actually participates in an activity, work, seminar or occupation his interests are manifested. An educational and Vocational counsellor may form an idea about the nature of interests of an individual from his actual performances.

3. "Tested Interests."—Modern psychologists have prepared many objective tests to determine and evaluate interests of pupils. Such objective tests are very often used for ascertaining interests of persons engaged in a particular vocation. Teachers use these tests in order to get relevant information regarding their pupil's interests in different school subjects.

4. "Inventoried Interests."—Such interests of a subject are generally determined by using inventories. There are some interest inventories which contain long lists of activities or occupations and the subject is asked to respond by showing his preferences or likings of those activities or occupations.

An individual's interests may be of varied nature. An individual's interest in a particular object or activity may fluctuate. Duration and intensity of interest in an object may vary from time to time. Then comes the question whether "interests are learned?" A few psychologists are of the opinion that it is better to say that "interests are discovered" and are not learned. In order to say that an individual likes an object or an activity, he is to discover whether he likes it and no learning process is involved in it. There are others who hold the view that interests are acquired and are modifiable. We cannot totally deny the statement that "interests are learned" to some extent. We are still not in a position to say definitely that interests are innate because we cannot ignore the influence of "environment and experience" upon an individual's interest pattern.

Permanence of Interests.

It is a common belief of psychologists that interests of an individual change along with age. Due to misunderstanding and ignorance many young pupils express their interests in occupations or vocations for which they have very little or no capacity. It has been observed by many research scholars that interests of

youngsters often change remarkably when they are below the age of 18. Even the expressed interests of adolescents drastically change after some time.

Super₁ said that "Most of the changes which does take place with maturity is complete by age 18 ; the type of change which may take place at that age is systematic and predictable on the basis of interest inventory data". Further researches will tell us at what age human interests are relatively stabilised.

Strong₂ who carried on extensive studies with interests for a long time observed in 1931 that things liked by an individual at the age of 25 are liked by him even after several years. Again in 1943 he said that interest patterns are fairly constant with adolescents. One thing we should remember that Strong's Interest Blanks are generally administered to late adolescents and grown up individuals. In one place Strong has said that interests do not become stable until the age of 17. So if we want to apply interest inventories to pupils of elementary and high school levels we will have to take some precautions and regard the scores as tentative measures. For educational and vocational decisions instability of young pupil's interest may pose as great hurdles and may tempt us to commit mistakes. But it may at the same time be very helpful and encouraging to an Educational and Vocational Counsellor. Had the interest pattern been fixed at an early age or had it been innate it would be impossible to develop and broaden pupil's interests through environmental influences and school activities.

Relation of Interests to Values and Attitudes.

The interests of an individual generally refer to his likes and dislikes for some specific objects and activities whereas values refer to his philosophy of life, his attitude towards other human beings, his attitudes towards religion and the society. Attitudes are mainly concerned with his "feelings of liking-disliking and

1. D. E. Super : Appraising Vocational Fitness. Harper & Bros. New York. 1949. p. 393.

2. Strong E. K. Jr. : "Vocational interests of men and women" Stanford University Press 1943. Strong E. K. Vocational Interest 18 years After College. Minneapolis University of Mannesota Press. 1955.

acceptance-rejection". Values are less concerned with the actual selection of vocations but more with the manner in which he attends his work. It, however, seems that there are some significant relationship between values and interests.

Interests and Abilities.

Interests and abilities are not the same, so interest scores and ability measures should not be confused. A pupil may like to become an Engineer but he may not have due mechanical and numerical aptitudes needed to prosecute studies successfully in an Engineering College. Again he may not possess even a little bit of spatial and drawing ability. In this case if he joins an Engineering course he will not be able to complete his studies there successfully. Interest measures will simply indicate that the pupil will get mental satisfaction in the activity which he likes most. His success in the activity will depend upon many factors and his ability is one of them.

Motivation theory holds the view that an individual having high ability for doing a work will also possess high degree of interest for that work. Our common belief is that a man doing a work successfully surely possesses high degree of interest for that work. We think that there is some relationship between interest and ability. But his success in the work may be due to the fact that a man of greater ability will try his best to finish the work successfully with all his might.

The question of relationship between interest and ability has been studied by many research scholars. Many of them found correlations between interest and ability ranging from $-.40$ to $+.40$. These research findings go against our common belief and motivation theory.

Assessment of Interests.

There are several methods for identifying and measuring interests. Teachers and counsellors are in need of some information regarding a pupil's interest. A counsellor may observe a pupil for a long time and can see what type of objects, activities and books are liked most by the pupil. By using an Activity Checklist a counsellor may get an idea of the nature of things done by the pupil on his own. When direct questions

are put a pupil will tell or write what activities or objects are liked by him. These procedures will give an idea of the pupil's interest to the counsellor but they are not so reliable because they have some limitations. A counsellor can observe a pupil when he is in the school situation only. A pupil will do things which are possible in his school environment and he will entirely depend upon his general knowledge in answering direct questions.

Psychologists have designed several standardised interest inventories to get rid of these limitations. These inventories have been developed mostly for use in educational and vocational guidance work. Good interest inventories for use in the field of curriculum and instruction are yet to be prepared.

The interest inventories consist of long lists of questions of self-report or survey type, for getting knowledge about a person's preferences in objects, occupations, music, literature, school subjects, amusements and so on.

There are some most widely used interest inventories. There are a few inventories which are applicable to young pupils. One inventory suitable for youngsters and two inventories suitable for adults are described below.

1. The "Occupational Interest Inventory",
2. Kuder Preference Record and
3. Strong Vocational Blank.

Occupational Interest Inventory.

The "Occupational Interest Inventory" was prepared by Edwin A. Lee and Louis P. Thrope and published by the California Test Bureau, Los Angeles, California (1956). The Occupational Interest Inventory commonly known as the "Lee-Thrope Inventory" consists of two forms. The 'First Form' of the inventory is meant for pupils of grades 7 to 12, and the 'Advanced Form' is meant for pupils of grades 9 upto adulthood. This inventory has been divided into two parts and provides scores under the following three interest areas.

Fields of Interests.

"Personal" (Personal Contacts with others), "Social" (interest in social service activities), "Natural" (activities and occupations which are to be done outside the room), "Mechanical"

(interest in some machines, mechanical designs or in some technological activities), "Business" (activities concerning trade and commerce), "Arts" (artistic activities-drawing, music, drama etc.) and "Sciences" (interest in scientific subjects).

"Types of Interests".

"Verbal, manipulative, and computational."

"Levels of Interests."

"Routine task, skill tasks, and tasks requiring expert knowledge, skill, and judgment."

The first two scores indicate the directions of interests of an individual whereas the last one shows the level of his interests. We have already stated that scores obtained by applying interest inventories should generally be regarded as tentative. So the information gathered by interest inventories should be confirmed by other tests. This inventory consists of items which are of the forced-choice type of items. The items which have been used in this inventory were selected and arranged by using common sense and logic. No statistical method was adapted in choosing the names of occupations and other terms. Lee and Thrope used the "Dictionary of Occupational Titles" and prepared a large number of "job descriptions in pairs." The subject is to put a circle around the job which is preferred by him. Authors have prepared a Manual showing the procedure of interpreting the obtained scores. Two samples of test items are given below.

"B 4 care for injured or sick horses, cattle, or hogs. F 1 Buy and sell used cars, radio, or other articles for profit."

Kuder Preference Record (1956).

The Kuder Preference Record was prepared by G. Fredric Kuder and was published by the Science Research Associates, Chicago. This is one of the most widely used interest inventories. This interest inventory intends to ascertain interests in vocational fields. Kuder Preference Record can be used at the high school level as well as at college level. There are three forms of this inventory. The most commonly used form is known as the "Vocational" Form. This inventory consists of 168 items. Items are composed of a large number of activities or occupations arranged in groups of three. The subject is

asked to decide which one of the three activities he would like most and which one he would like least by punching holes in appropriate places. On the right hand side of each group of activities are drawn two circles for each activity. The subject is to punch a whole on a circle. A few examples are given below.

	1	3
"P. Visit an art gallery	0 P 0	
	1	3
Q. Browse in a library	0 Q ● ←least	
	1	3
R. Visit a museum	most→● R 0 "	

Items of Kuder Preference Record are said to be of forced-choice type because the subject is to indicate his preference between two alternatives. This interest inventory covers ten interest areas. They are as follows :— Outdoor, Mechanical, Computational, Scientific, Persuasive, Artistic, Literary, Musical, Social Service and Clerical. The activities grouped in each cluster have some correlation with each other. The author has provided a Scoring profile and a "Verification score". The "Verification score" shows whether the responses are made carefully or are improperly made. This inventory includes the names of many occupations with which very young pupils are not at all familiar. A pupil may be careless, insincere and may not understand directions properly. In such cases there may be "too low" or "too high" V-scores.

The two other forms of this inventory are known as the Personal Form and the Occupational Form. The Personal Form measures the subject's preferences for "personal and social activities." The Occupational Form measures his preferences for specific jobs or occupations instead of general areas.

It is easy to administer, score and interpret this interest inventory. Common sense and day to day experience has been used in selecting items. Kuder Richardson method was adapted in determining the reliability of the inventory. The reliability of the inventory ranges from .85 to .92. Due to lack of adequate knowledge of language of young pupils this inventory has been found to be considerably difficult for pupils below the 9th grade. can be scored either by machine or by hand.

Kuder Preference Record has been found to be very useful by the Educational and Vocational Guidance Officers. Scores above the 75th percentile definitely indicate significant interest areas.

Strong Vocational Interest Blank

The Strong Vocational Interest Blank is another widely used interest inventory which is generally used at the high schools and colleges. It is a product of extensive researches and experimentation. This inventory was first published in 1927. It has been revised for several times. A large number of questionnaires on self-ratings, forced-type questions and preference questions are included in this interest blank. The Strong Vocational Interest Blank consists of nearly 400 items. The subject is required to answer majority of the questions by putting circles either around L (Like) or I (indifferent) or D (dislike) as he thinks right. All the items are grouped as follows :— “(a) preference toward occupations, (b) school or college subjects, (c) amusements or recreations, (d) personality inventories (self-rating), (e) some peculiarities of people, (f) preference of indoor activities, (g) choice of activities and (h) comparison of interests.”

This inventory intends to determine the extent of similarity between a subject's interests and the interest patterns of those persons who are successfully engaged in a specified occupation. Successful persons of a specified occupation are those persons who are making a good annual income and have become indispensable to their employers. Numerical scores are given to subject's responses. It is expected that all persons engaged in a certain profession will have almost similar interest patterns. It is very often said that all successful engineers will have interest in engineering subjects.

Suppose that responses of an individual are compared with the responses of some successful members of the engineering occupation. If we see that his interests correspond with those who are successful in the engineering occupation we can say he has significant interests in engineering occupation.

There are two forms of this interest blank : (I) Men's Form and (II) Women's Form. Fiftyfour occupations (e. g.

printer, carpenter etc.) have been grouped in the Men's form whereas only thirtyone occupations (e. g. nurses, stenographers etc.) have been grouped in the Women's form.

Weighted scoring keys have been developed for each occupation. There are about 50 scoring keys for men's form and about 30 scoring keys for women's form. Therefore an interest blank is to be scored with the help of the scoring key meant for the particular occupation. Weighted scores are given to each subject's responses. An individual's total score on a particular scale is obtained by totalling all his positive (+) and negative (—) credits. Point scores obtained by an individual are converted into standard scores in order to make it comparable with other's scores.

Hand scoring and interpretation take much time and is a laborious process. Now-a-days electronic scoring machines are used for scoring answer sheets. Answer sheets can be sent to the "Test Scoring Bureau" where they can be scored and profiled. Such Bureaux will charge some fees. Test items are like the following :

"Librarian	...	L	I	D
Artist	...	L	I	D"

The Global Interest Chart. (Strong)

Strong₁ has provided about 50 scoring keys for different Occupations. A counsellor should get a fair idea of the total picture of an individual's interests for effective guidance service. As this inventory is extremely time consuming, expensive and laborious it is very difficult to get a complete profile by applying Strong's Interest Blank. A few clusters of interest patterns have been prepared in order to avoid above-mentioned difficulties.

These clusters or groups of interests for men are as follows :—

"Group I, Scientific : Creative : Artist, psychologist, architect, physician, dentist etc.

Group II, Technical : Mathematician, Physicist, Engineer, Chemists etc.

Group III, Production Managers.

Group IV, Heterogeneous Group (Sub-professional technical) : Farmer, Carpenter, Printer, mathematics-Science teacher, policemen, forest service etc.

Group V, Social Welfare (upliftment) : Secretary, Y.M.C.A. Physical Director, Personnel Manager, Social Science Teacher, Minister, School Superintendent etc.

Group VI, Musicians.

Group VII, Certified Public Accountant.

Group VIII, Business detail : Accountant, banker, purchasing agent etc.

Group IX, Business Contact : Sales manager, real-estate salesman, life insurance salesman etc.

Group X, Verbal : Advertising man, lawyer, author-journalist etc.

Group XI, President of manufacturing corporation."

Following four non-occupational scales have also been added.

1. Specialisation Level Scale (desire to become a specialist),
2. Interest Maturity scale,
3. Occupational Level Scale, and
4. Masculinity—Femininity Scale."

At first the broad group into which an individual falls is noted from his scores. Then the specific occupations are considered. Different scores are given by different letter grades, such as, A, B+, B, B-, C+, and C. A indicates primary interests, B+ indicates secondary interests and B indicates tertiary interests. If in an interest blank for a particular occupation an individual's score is A, his likes and dislikes are thought of as similar to men successful in that occupation. If his score is B then we can say that his interests are like the normal group. Score C indicates no likeness between the particular individual and the normal group.

Many psychologists have found Strong Interest Blank a valid and reliable measuring instrument. Its reliability ranges from .73 to .93.

Strong vs Kuder Tests.

Both the Strong Interest Blank and Kuder Preference Record

are very popular. They are widely used by Educational and Vocational counsellors. Both of them can be easily administered and require almost the same amount of time to administer. The test materials of both of them cost equal amount of money. They may be applied to subjects of the same age range. Both of them are valid tests.

But the cost of scoring of Strong's tests is much higher than that of the other test. The cost of scoring is much less in the Kuder test because even the subject himself can score his answers. The Strong tests will tell to what occupational group of persons the subject belongs by his interest, whereas the Kuder tests will tell the nature of the occupation which is preferred by the subject. Strong adopted the empirical method for ascertaining validity. So Kuder's logical validity is a bit higher than that of the other. Strong recommended only weighted scores to be considered. Responses in Strong's empirical tests can be easily faked.

Strong prepared separate blanks for men and women, but in Kuder's tests same items are used both for men and women. Kuder, however, prepared separate profiles for men and women.

Utility of Interest Inventories.

1. As interests of individuals are found to change during the period of adolescence one may not think advisable to use interest inventories to individuals below age 17 or 18. There are authors who think that interest tests can be administered from the end of grade 8 but the interpretations of the responses should be accepted as highly tentative. The instability of interest seems to be blessings in disguise. This instability of interests of young pupils enables teachers and guidance officers to broaden, modify and develop interest patterns of their pupils to a considerable extent through curricular and co-curricular activities. In most of the cases a Vocational Counsellor is to predict vocational success of pupils during this period of instability of interests. Therefore he will have to proceed very cautiously.

A teacher may use interest inventories as an aid to his teaching technique in "group guidance courses" and in

"Occupation Course". A school student's interest pattern or his preference for a particular occupation should not be accepted as his final choice. But interest inventories serve as the starting point of study, thinking and discussion about his future vocational possibilities.

2. Interest tests are very useful in guidance programmes. Through the interest inventories counsellors can introduce to their counsellees the nature and scope of various occupational fields which may not be known to the counsellees. Interest inventories help pupils to get some idea about the world of work and the areas where most people work. Therefore interest inventories enable pupils to view the world of work, to examine the alternative occupational opportunities open to them and to get some idea about their future prospects. Students of top classes of Secondary Schools begin to think about their future vocations seriously.

In the process of educational and vocational guidance several alternative courses of studies and occupations are to be considered before making the final selection. It has already been stated that previous planning is an essential part of guidance work. Interest inventories will help the process of Vocational planning.

3. Interest inventory profiles enable a student to know his interest pattern and limitations. Though interest scores of school students are taken as tentative indicators still they are important in making final decisions.

4. There are many students who do not know what they want to do. They cannot decide what occupation will be suitable for them. They simply spend their time in thinking about their future and wait anxiously to see what has been stored for them by God. They depend solely upon their fate. Interest inventories will act as a strong support to them and will motivate them to shirk their indecisive attitude and make decisions for the future ignoring anxiety. In schools also interest inventories assist students to select school subjects with increased enthusiasm and confidence.

5. Interest inventories may be used by counsellors to solve different types of student problems. A counsellor can discuss

with his pupils about the implications of interest inventory profiles.

Some Limitations Of Interest Inventories.

There are some limitations and disadvantages of interest inventories which can not be ignored. They are as follows :

1. Very often parents, students and teachers tend to confuse measures of abilities with interest inventory scores. A student may have interest in mechanical work but he may not possess mechanical aptitude. Gross₁ said that "The interest tests make no pretense of being "aptitude" measures, but this is seldom understood—not only by parents, but by teachers as well."

2. Students may fake their responses in an interest inventory. They try to give their responses in a manner which they think will be best responses. They may give faked responses either deliberately or unconsciously. Therefore distortions may be caused by deliberate and unconscious attempts of students. In many cases students try to rationalise their responses without knowing anything.

3. Again in some cases students think that they should give such responses which seem to be socially desirable. They may try to conceal their real performances and express such choices which they think will give them social status.

4. In most of the cases interest inventories do not evaluate an individual's work methods. On the nature of the method in which an individual works will surely depend his success in the occupation in future. A student's work pattern which is so very important is not revealed by interest inventories.

5. Interest inventories do not give proper emphasis upon the depth, difficulty or strength of a subject's interests.

6. Reading and Vocabulary difficulties may distort response of students. Students having mother tongues other than English may not understand questions presented in English. Again interest inventories may refer to some occupations which are quite unknown to students. In such cases they may give response

1. M. L. Gross; *The Brain watchers*, Random House, New York, 1962, P. 172.

bindly. So all students should be familiarised beforehand with the occupations which are referred to in the interest inventory.

Again the interest inventory presented to a particular student may not contain the name of the job which is most preferred by him. Here his judgment will be invalid.

7. From a student's responses to an interest inventory we cannot definitely say how far his judgments were influenced by his intelligence.

8. Interest inventories are administered in an artificial and limited situation. It is yet to be proved how far predictions based upon such a situation will be realiable in real situations.

EXERCISES

1. Define "Interest". Discuss the various co-curricular activities for the development of vocational interest in your pupils. B. T. 1965. C. U.
2. Discuss the educational and vocational significance of Interests and show how interests can be measured with the help of an objective rating scale. C. M. C. 1965. W. B.
3. What is the relation between interest and ability? Mention a few methods of exploring a pupil's interest. C. M. C. 1966. W.B.
4. What is interest? Write how interest can be developed in schools. Mention in that connection the role of Hobby Club. C. M. C. 1966. W. B.

CHAPTER VII

APTITUDE AND APTITUDE TESTS.

What do we mean by the term Aptitude—Achievement Tests, Scholastic Ability Tests and Aptitude Tests—Different Types of Aptitude Tests—Description of a few Aptitude Tests—Attitude Scales.

An individual may be a good musician or a talented artist or one very strong in mathematics or an efficient mechanist. A person having any of these qualities surely possesses special gift or talent for such an activity and it may not be common to others. It is very often noted that such abilities improve gradually if proper opportunities are provided. Psychologists are of the opinion that there is something in the mental organisation of some people which make them proficient in different types of activities. A particular individual may be found to be very good at clerical work or in mechanical work or in art or in music or in administrative work or in legal profession and so on. This something in the mental organisation is supposed to be an aptitude or a trait or a talent or a special ability or something else. Various terms such as aptitude, talent, special ability, trait etc. are used by different persons to describe this something in the mental organisation. But they are to some extent overlapping. Large number of scholars prefer to call these gifts as aptitudes.

Different psychologists tried to define the term aptitude in different ways. Bingham₁ said that "Aptitude—a condition or set of characteristics regarded as symptomatic of an individual's ability to acquire with training some (usually specified) knowledge, skill, or set of responses such as the ability to speak a language, to produce music, etc." In another place Bingham₂ stated that "aptitude, then, is a condition symptomatic of a person's general fitness, of which one aspect is his readiness to acquire proficiency—his general ability—and another in his readiness to develop an interest in exercising that

1. Warren, H. C.—Dictionary of Psychology, Boston, Houghton Mifflin Co. 1934.
2. Bingham, W. V.,—Aptitude and Aptitude Testing. Harper & Brothers, New York. 1937.

ability." Freeman₁ said that "an aptitude is the ability or collection of abilities required to perform a specified practical ability". From these definitions it can be said that aptitude should not be regarded as a faculty or as an unitary trait but it should be regarded as a combination of several traits. Bingham has not definitely said whether aptitude is innate or acquired. Freeman is of the opinion that an aptitude is not necessarily innate but at the same time it cannot be regarded as a product of systematic training. It has been observed by many people that though it is not to be regarded as a product of training it is improved by training.

Hahn and MacLean₂ defined aptitude in the following lines "Aptitudes are correctly referred to as latent, potential, undeveloped capacities to acquire abilities and skills and to demonstrate achievements." Therefore aptitude may be regarded as a latent and unlearned potential or capacity for learning some skills or as power of earning an ability required for success in a particular job.

For all practical purposes an educational and vocational counsellor is not very much concerned with the question whether aptitudes are learned or acquired but he is concerned about the presence of this potentiality in an individual. Different aptitudes are essential for learning new skills and for success in different areas of work. Bingham further said that "whether he was born that way, or acquired certain enduring dispositions in his earliest infancy or matured under circumstances which have radically altered his original capacities is, to be sure, a question not only of great theoretical interest but of profound importance to society at large." Therefore it seems that aptitudes are generally inherited and do not appear unless environmental conditions are made favourable. For the proper development of an individual's particular aptitude there should be necessary arrangement for training.

Achievement Tests, Scholastic Ability Tests and Aptitude Tests

In the sphere of mental measurements we see different

1. F. N. Freeman, *Mental Test : Their history, principles and applications*. Rev. ed. Houghton Mifflin Co. 1939.
2. E. M. Hahn and M. S. MacLean—*General Clinical Counselling*, McGraw—Hill Book Co., New York, 1950.

types of psychological tests such as achievement tests, scholastic ability tests and aptitude tests. But all of them are to some extent overlapping one another because the same type of materials are used. They differ only in respect of their purpose or interpretation.

We have discussed elsewhere that achievement tests mainly measure an individual's acquired knowledge, skills and concepts in some selected areas. Achievement tests estimate the outcomes of instruction in some school subjects, such as reading, writing, spelling, arithmetic, language and so on. If a particular pupil scores high in an achievement test on language we are apt to suppose that he will do well in language in future also. But it is very doubtful whether achievement tests say anything definitely about the pupil's potentials.

There are some people who think that an individual's "capacity to learn" can be estimated by scholastic ability tests. By scholastic ability tests they understand intelligence tests, scholastic aptitude tests and other mental ability tests. Originally psychologists were of the opinion that the potential for learning can be measured only by intelligence tests. But that idea is declining. Now-a-days people think that mental ability tests and scholastic aptitude tests measure these learning potentials. It has been said that intelligence tests may not measure an individual's pure innate ability only. But it measures the potentials which have been modified by the environment. Similarly "Scholastic aptitude tests do not measure native capacity or learning potential directly" but they measure "performance based on learned abilities." Scholastic aptitude tests measure an individual's ability to learn new things to a great extent.

Any how other aptitude tests purport to measure a man's potential for doing something proficiently. Aptitude tests are applied for making predictions about the man's future learning and behaviour. Aptitude tests can be divided into following two groups : (a) Scholastic aptitude tests and (b) Vocational aptitude tests. It is very difficult to draw a line of demarcation between a scholastic aptitude test and a specific mental ability test. Vocational aptitude tests are a bit different from the so

called mental ability tests. Here, in this chapter, we are mainly concerned with this type of aptitude tests.

While constructing an aptitude test a test maker should remember that though an aptitude test purports to measure an individual's potential for doing some work it is dependent upon what he has achieved during his life time. Again an ability is to be estimated from one's performances and cannot be measured absolutely by ordinary tests. It is not easy to avoid the effects of previous learning or achievement which will definitely vitiate one's scores in an aptitude test. The difference between an achievement test and an aptitude test lies in the fact that achievement tests are prepared to evaluate what the individual has learned as an outcome of schooling whereas aptitude tests are constructed for measuring his probable future proficiency in some work and for making some predictions.

Different Types of Aptitude Tests.

It has already been said that human potential for doing something has been expressed by the terms such as aptitude, talent, special ability, trait etc. Tests for measuring these potentials are known as aptitude tests, talent tests, special ability tests and so on. In most of the psychological laboratories aptitude tests are used for measuring potentials for doing some work such as clerical skills, mechanical comprehension, motor co-ordination etc.

While constructing an aptitude test the test maker should first of all settle the job or work for the future efficient performance of which he intends to prepare an aptitude test. Then the psychological components or the abilities required for successful performance of the job are analysed. Now test items which are expected to reveal those components are prepared. After that all the normal steps for the construction of standardised psychological tests are followed methodically.

Aptitude tests are generally prepared for measuring (a) motor ability, (b) mechanical aptitude, (c) clerical aptitude, (d) Vocational aptitude, (e) professional and academic aptitudes and other aptitudes.

(a) Motor Ability Tests.

Examples of a few of the well known motor ability tests are given below.

(i) Stanford Motor Skill Test. Six dexterity tests are included in this battery of tests.

(ii) Finger Dexterity Tests. This test consists of a metal peg board with 100 holes in it. The subject is supplied with 300 one inch long metal pegs and is directed to fit these pegs or pins in each hole in the board in the shortest possible time. Scores are given in terms of the time taken by the subject.

(b) Mechanical Aptitude Tests.

Nature of Mechanical Aptitude Tests : It has already been said that a mechanical aptitude test is used to ascertain and predict whether an individual will do good in a mechanical job or will be successful in an engineering course. It is very difficult to prepare a test which will measure only the pure mechanical aptitude because this aptitude has been found to be interrelated with some other traits. Most of the tests measure to some extent intelligence, physical abilities and different aptitudes of an individual along with his mechanical aptitude. A test which measures pure mechanical aptitude only may be safely regarded as a mechanical aptitude test.

There are some psychologists who think that the mechanical ability has got several components such as spatial perception, imagination, mechanical comprehension, drawing ability, understanding of the working principles of some machines and a few other similar activities. Manual dexterity, which includes muscular co-ordination, motor abilities, endurance and speed of movement may also be regarded as one of the elements of mechanical aptitude.

An individual who possesses high degree of mechanical aptitude is expected to become a good engineer or a machine shop worker. A guidance Officer will have to determine whether an individual possesses this aptitude, ascertain the nature of his mechanical aptitude and then to compare his aptitudes with available educational courses or occupational opportunities which may be suitable for him.

Various methods can be adopted to determine an individual's mechanical aptitude. In some cases it may be done by trial or by a "try-out course". In this system several individuals are allowed to do mechanical jobs or are allowed to work as mechanic helpers. While working they are observed by several experts and rated by them.

The experimenter is to scrutinize the examination marks obtained by a pupil in some school subjects which require mechanical aptitude for their successful performance. Experts are of the opinion that school subjects such as wood-craft, mechanical drawing, mechanics, hydrostatics, automechanics etc. require high degree of mechanical aptitude. But it should be remembered that in order to be successful in some engineering or professional courses an individual should score higher than an average pupil in school subjects, such as, Physics, Mathematics and in several other science subjects.

Mechanical ability may also be estimated from the nature of work done by a pupil in Hobby Clubs. Choice of hobbies which are concerned with mechanical activities may indicate the presence of mechanical aptitude to some extent.

It is also possible to estimate the degree of mechanical ability possessed by an individual from his scores in an interest inventory.

Most of the above mentioned methods are applicable in cases of school children. But a guidance officer may be required to estimate the mechanical abilities of men who are not regular students.

Therefore the general method of determining mechanical aptitude is through standardised psychological tests. These tests are known as mechanical aptitude tests. Mechanical aptitude tests may be of the following two types : (a) paper and pencil tests, and (b) performance tests with some mechanical devices or apparatus. Most of the paper and pencil tests in this area measure either mechanical information, manual dexterity, mechanical comprehension or spatial abilities.

Tests such as assembly of some disassembled parts of an apparatus, block or cube construction, puzzle box tests and spatial form boards are some of the good examples of "mechanical ability performance tests."

Originally most of the tests were individual tests but during the last few years several group tests have been constructed. Several research scholars, including the present author, have observed high degree of positive correlation between the scores in mechanical aptitude tests and scores in engineering school subjects.

But for the prediction of success in engineering course one should not depend solely upon the results of mechanical aptitude tests. The pupil's intelligence, school examination marks, other skills and interests should also be taken into consideration.

The following are examples of good mechanical aptitude tests.

1. Stenquist Assembly Test of General Mechanical Ability.

One of the old test of the mechanical ability is Stenquist Assembly Test of Mechanical Ability. Two sets of mechanical objects, each set consisting of 10 small objects, are presented to the subject in this test. The different parts of the mechanical objects are disassembled. All the disassembled parts of each mechanical object are to be reassembled by the subject in 30 minutes. The first set of 10 objects consists of articles like cupboard catch, Hunt Paper clip, Bicycle bell, a tock etc. The other set of 10 objects consists of articles like Sash fastner, Rope coupling, Pistol, Double-action hinge, Expansion nut and similar other articles. Teacher's ratings for mechanical aptitude in some school subjects were taken as validating criterion. Reliability of the test ranges from .80 to .06. The correlation between the scores of this test and scores of an intelligence test was found to be very low.

2. Macquarrie Test of Mechanical Ability.

This test battery was prepared by T. W. Macquarrie and was published by the California Test Bureau, Los Angeles, California. It is a paper and pencil group test. About 30 minutes time is required to administer this test battery. Test items are like the following.

- (a) Tracing—drawing of lines through narrow passages.
- (b) Tapping—placing some dots as quickly as possible.
- (c) Dotting—The subject is required to place dots in as many circles as possible within limited time. He is to begin from one end.

- (d) Copying—The subject is to copy some figures by joining some dots placed on a piece of paper.
- (e) Location—
- (f) Block Counting—In this test item pictures of stacks of blocks are presented to the subject. He is to count the number of blocks including the blocks which are placed on the opposite side.
- (g) Pursuit—The subject is to trace the course of a line passing through a complicated path.

It is claimed that MacQuarrie tests normally measure the finger movements, the eye-hand coordination, the manual dexterity, the visual acuity, the spatial perception and the speed of an individual. In short it is said that the MacQuarrie tests measure motor dexterity. Though this test battery possesses high predictive values yet for measuring mechanical comprehension it is not so satisfactory.

It has got only one form and can be used from grade 7 to adult level. A large number of school students of ages 10 to 20 years were used as standardisation group. Test-retest method was adopted in determining the reliability of the test. The reliability of the test battery is as high as .90. The validity of the test battery is reported to be satisfactory. The author has supplied percentile norms for the sub-tests as well as for the total score.

3. Bennett Mechanical Comprehension Test.

Another most widely used test is the Bennett Test of Mechanical Comprehension. According to Bennett "the problems have been selected in such way as to minimize the effect of training." Test items intend to estimate comprehension of principles instead of 'specific Verbal learning.'

This test was prepared by G. K. Bennett and was published by the Psychological Corporation, New York. This is a paper and pencil test. This test can be administered individually or in groups. In this test some pictures and sketches are presented to the subject. Along with each picture there is a question which is to be answered by the subject. Questions are put in such a way that the responses may reveal the subject's understanding of the mechanical problem presented to him.

There are following four forms of the test.

- a. Form AA—This form of the test is meant for the pupils of Trade Schools, High Schools and trained workers of low level.
- b. Form BB—This form of the test is a bit difficult. This is meant for engineering school students, engineers and other technicians.
- c. Form CC—This form of the test is really difficult and is meant for engineers of high levels.
- d. Form WI—This form of the test is meant for women.

There is no time limit in this test but it is said that it should not take more than 30 minutes. Over 5000 pupils from ninth grade to adult candidates for technical courses served as the standardisation group.

Spearman-Brown formula was used to determine reliability of the test for pupils of the ninth grade. The reliability has been reported to be .84. It is very difficult to determine the validity of such a test. Still a combined weighted score of the MacQuarrie test, Detroit Mechanical Aptitudes Examination and the Revised Minnesota Paper Form Board Test has been used as the criteria for determining the validity of the test.

This test is very useful for guidance purposes and in selecting pupils for mechanical and engineering courses. MacQuarrie Test may be used as a supplementary to the Bennett Test for estimating speed and manual dexterity.

The author has supplied percentile norms for each test form. This test is applicable to pupils of different grades and of different occupational groups.

C—Clerical Aptitude.

Nature of Clerical Aptitude : Several studies have been made to find out the nature of clerical aptitude. By the term clerical aptitude is generally understood the mental ability which enables its possessor to perform clerical jobs efficiently and to progress in it. There are different types of clerical workers such as junior clerks, senior clerks, filing clerks, accounts clerks, sales clerk, stenographers, receptionists, booking clerks, typists and so on. Different types of clerical workers are required to do different duties. If all the duties of clerical

workers are analysed we will see that almost all of them need some efficiency in reading, writing, arithmetic, checking, filing, sorting and preparing drafts. In order to be successful in clerical job an individual needs more than one aptitudes. In addition to clerical aptitude he should possess some amount of manual dexterity, speed, accuracy and skill.

Andrew D.M.¹ performed some experiments with clerical aptitude. Andrew noticed that the following five traits are essential to being a good clerical worker. These traits are "(1) Speed and accuracy, (2) power of discriminating simple things quickly, (3) motor ability, (4) spatial ability, and (5) ability to observe and compare."

In a factorial study the Division of Occupational Analysis, War Manpower Commission of the U.S.A.² noticed the existence of the following five traits: "Verbal, Numerical, Spatial, and two perceptual factors." These two perceptual factors have been named P and Q factors. The Q factor was measured by tests dealing with arithmetical calculations, coding, word checking and copying. Some authors opined that this Q factor includes many abilities which are essential to efficient clerical work.

Therefore the elements of clerical aptitude are ability to work speedily, ability to work accurately, ability to discriminate letters or words and numbers.

Our next business is to see how we can measure clerical aptitude. For an approximate estimation of an individual's clerical aptitude we can adopt the following methods.

We can ask the individual to do some filing work, typing work, reading of some handwritten letters, preparing an easy bill and the like. After a few trials we will be able to estimate his clerical aptitude to some extent. But this is a very time consuming and uneconomical method. So it is not considered as a satisfactory and practicable method.

1. Andrew D. M.—"An analysis of the Minnesota Vocational Test for Clerical Workers, I and II." *Journal of Applied Psychology*, 1937. —21.
2. Division of Occupational Analysis. U. S.A. "Factor Analysis of Occupational Aptitude Tests." *Educational and Psychological Measurement* (1945), 5.

We can get some idea about an individual's clerical aptitude from his hobbies and interests. But it is safer to use the information gathered from his hobbies and interests as supplementary to some specific clerical aptitude test.

Now-a-days most of the employers, while appointing a clerk, take into consideration the marks obtained in various school subjects, such as English, Mathematics, Book-keeping, Commercial Correspondence, Commercial Geography, Accountancy and typing by the candidate. But an employer will face difficulties in judging clerical aptitude from the examination marks obtained by a student in school subjects of pure science and humanities streams.

In order to measure clerical aptitude more accurately different psychologists have devised different psychological tests. A few examples of Clerical Aptitude Tests are given below.

a. Minnesota Clerical Test.

(Minnesota Vocational Test for Clerical Workers.)

The Minnesota clerical test was designed by D.M. Andrew, D.G. Paterson, and H.P. Longstaff. It was published by the Psychological Corporation, New York, in 1933. This battery of tests generally measure speed and accuracy. It has got only one form. The whole test has been divided into two separately timed parts. They are known as Number Comparison and Name Comparison tests. In the Number Comparison test there are 200 pairs of numbers. Each pair of numbers consists of numbers from 3 to 12 digits. These pairs of numbers are presented to the subject. There is a short line in between two numbers in each pair. The subject is to compare both the numbers of a pair and if the numbers are same he is to put a check (\checkmark) mark in the line drawn in between them. If they are not the same he should not give any \checkmark mark in the line. Examples of test items are like the following.

The time allowed for this part of the test is 8 minutes.

85241	_____	84521
497623	\checkmark	497623

In the name comparison test there are 200 paired proper names. Each pair of names consists of names varying in length from 7 to 16 letters. In between two names in each pair there

is a small straight line. These pairs of names are presented to the subject. The subject is to inspect and compare both the names of the same pair. If the names of a pair are the same he is to put a check (\checkmark) mark in the line drawn between them. If they are not the same he should not put any check (\checkmark) mark. The time allowed for this part of the test is 7 minutes. Examples of the test items are like the following.

Lalitkumar————Lalitkoomar.

Gram Panchayat \checkmark Gram Panchayat.

Half of the items of the Minnesota Clerical Test is correct, that is both the numbers or names of the pairs are the same, and half are incorrect. Guidance and Personnel Officers use this test as a prognostic test for guiding and selecting clerical workers.

There may be some subjects who are slow and over cautious. These subjects will be able to attempt small number of items within the stipulated time. Though most of their answers will be correct still they will achieve low scores. Again there may be another type of subjects who are very fast but very careless. They will commit more mistakes for their carelessness and achieve low scores. A test administrator will have to take note of these groups of subjects while administering this test.

Test-retest method has been applied for determining the reliability of the test. Reliability of the test has been reported to be .85. As regards validity of the test it has been said that this test is quite suitable for predicting purposes. Authors have prepared separate percentile norms for boys and girls of different ages and grades. Norms are also available for women and workers in different types of clerical jobs.

(b) SRA Clerical Aptitudes.

This test was prepared by Richardson, Bellows, Henry and Company. It was published by the Science Research Associates in 1948. There are two forms of the test : Forms A and B.

This test is suitable both for school students and adults. This test consists of following sub-tests.

1. "Office Vocabulary"—There are 48 pairs of words. Some pairs of words have the same meaning. In some cases words of opposite meanings have been grouped together. In some

pairs words have no connection with each other. The subject is to tell which pairs of words have the same meaning and which have the opposite meaning and which have no bearing on each other.

2. "Office Arithmetic"—There are 24 multiple-choice items requiring arithmetical skills for their solution.

"Office Checking"—There are 44 items in this subtest.

The Reliability Co-efficient of the test has been reported to be .92. No definite statement has been made as regards its validity. Separate norms have been supplied for different grades of subjects.

Vocational, Professional and Academic Aptitudes.

(a) Differential Aptitude Test (DAT).

The makers of the Differential Aptitude Tests are G. K. Bennett, H. G. Seashore and A. Wesman. The third edition of this battery was published by the Psychological Corporation, New York, in 1959.

According to them "Differential Aptitude Tests were developed to provide an integrated, scientific and well-standardised procedure for measuring the abilities of boys and girls in grades eight through twelve for purposes of educational and vocational guidance. While the tests were constructed primarily for use in junior and senior high schools, they may be used also in the educational and vocational counselling of young adults out of school and in the selection of applicants for employment".

There are eight tests covering seven areas in this test battery. Therefore eight separate scores are obtained by applying the whole battery of tests. Seven areas covered by the battery are stated below.

1. Verbal reasoning :—

This is a verbal analogies test which purports to measure an individual's ability to understand verbal relations and their use.

2. Numerical ability :—

This is an arithmetic test where the subject is to solve a large number of mathematical problems. We generally use this test for predicting future success of pupils in scientific and engineering courses.

3. *Abstract Reasoning* :—

This test has been designed to estimate the level of abstract intelligence of an individual. It is a non-verbal test. Problems are presented to the subject in the forms of diagrams and pictures.

4. *Space Relations* :—

In this test a few two-dimensional figures are shown to the subject. He is to prepare a three-dimensional pattern from the two-dimensional pattern. This test measures the spatial ability of the subject. Spatial ability is essential for pupils who want to prosecute studies in engineering and architectural courses.

5. *Clerical Speed and accuracy* :—

There are two forms of this test (Form A and Form B). It consists of 100 test items. The subject is to identify "identical letter-digit combinations" from several other similar combinations. Clerical worker's speed and accuracy have been considered to be two essential requirements.

6. *Mechanical Reasoning* :—

This test consists of test items just like the Bennett Mechanical Comprehension Test. Guidance Officers use this test for predicting success in engineering courses.

7. *Language Usage* :—

Language Usage Test I and Language Usage Test II. Two tests are scored separately. Test I measures ability to spell correctly. Some words are presented to the subject. He is to say "whether each word is spelled rightly or wrongly". Test II measures the ability to find out errors in sentences. Some correct and incorrect sentences are presented to the subject. He is required to point out the errors, if any, in those sentences. Separate answer sheets are provided in both cases.

A Manual has been provided. All directions as regards the administration and the method of scoring are given in the Manual. It is possible to get the total score as well as separate scores for each of the eight sub-tests. A profile can be prepared for a single individual which will show his comparative performances in those eight activities. A "single over-all score" for a few "analytic scores" enables a guidance officer to get a

comprehensive idea of an individual's different aptitudes. The profile may also be used by a guidance officer as a diagnostic instrument.

It takes about three hours to administer all the tests of the battery. Percentile norms are available for the total score and for each separated sub-test. Separate percentile norms are available for boys and girls. The reliability of the D.A.T is quite satisfactory.

Though the D. A. T has been found to be reliable and useful by the guidance counsellors it has got many limitations also. It is very time consuming and costly. Exhaustive norms for all individuals engaged in various occupations and vocations are not available. The method of determining its validity has been questioned by many experimenters.

b. Multiple Aptitude Tests.

This battery is known as the MAT and was designed by David Segal. It was published by the California Test Bureau in 1959. This battery of tests measures differential aptitudes. The special feature of this test battery is that it enables an individual to understand his own aptitudes and to visualize what type of vocations and academic courses are most suitable for him. Test items are concerned with the following areas : (1) "Verbal Comprehension", (2) "Perceptual speed", (3) "Numerical reasoning", and (4) "Spatial Visualisation".

This battery of tests is suitable for students in grade 7 through adult. It requires about three hours to administer the whole battery of tests. Reliability of the test battery ranges from .72 to .92. Norms are available for different grades of pupils and for 42 occupational groups.

c. Flanagan Aptitude Classification Test.

The Flanagan Aptitude Classification Test was designed by J. C. Flanagan and was published by the Science Research Associates of Chicago in 1960. Flanagan's idea was to prepare a test battery which will be able to determine definitely the aptitudes which are required for success in specific occupations. The total amount of time required for administering the whole battery of tests is approximately 10 hours.

Vocational Counsellor can use this test battery to predict success in a particular job on the basis of the nature of aptitudes. Teachers can use this test battery for planning the performances of the courses of studies of their pupils. Personnel Officers find it very useful in the process of selection and placement of employees.

This test battery consists of 16 tests concerning the following areas :— “1. Inspection, 2. Memory, 3. Coding, 4. Precision, 5. Assembly, 6. Scales, 7. Co-ordination, 8. Arithmetic, 9. Tables, 10. Judgment, 11. Patterns, 12. Components, 13. Reasoning, 14. Expression, 15. Mechanics, and 16. Ingenuity.”

There are 13 paper and pencil tests and three performance tests in this battery. This battery is suitable for pupils from grades 9 to 12. Authors have supplied stanine scores for each test. The reliability co-efficient has been reported to be satisfactory.

d. General Aptitude Test Battery (GATB).

General Aptitude Test Battery is commonly known as the GATB, B-1002. This battery of tests was published by the Bureau of Employment Security, Washington D. C. in 1962. This battery has been designed “to measure capacities to learn various jobs”. It is claimed that this battery measures (1) intelligence, (2) numerical ability, (3) Verbal ability, (4) form perception, (5) Clerical perception, (6) spatial ability, (7) motor Co-ordination, (8) manual dexterity, and (9) finger dexterity.

There are 12 tests in this battery for measuring nine above-mentioned factors. There are eight paper-and-pencil tests and four performance tests in this battery.

e. Minnesota Paper Form Board. (MPFB)

This battery of tests measure mainly the spatial ability. It is a paper-and-pencil test. In this test some known geometrical figures are cut into several parts. These cut pieces are shown on the top of the page. Below these cut pieces five complete geometrical figures are given. When those cut pieces are mentally assembled together the complete figure will look like one of the five figures drawn below. The subject is required to point out that correct figure. This test reveals an individual's

ability to perceive spatial relations and his ability to manipulate two dimensional figures. Spatial ability is an essential ability which an engineer should possess. This test has been found to be very useful by Educational and Vocational Guidance Officers.

This test can be administered to pupils of the 7th grade and above. Authors have supplied norms for different grades of pupils. It can be easily administered and scored.

f. Professional Aptitude Tests.

There are several professional aptitude tests also. These tests are almost like achievement tests. Following professional aptitude tests are used widely.

1. Medical College Admission Test.
2. Law School Admission Test.
3. Pre-Engineering Ability Test.
4. National Teacher Examination.

Talents or Artistic Aptitude Tests.

There are some people who are unwilling to accept talent tests as aptitude tests. They think that talent is a special type of innate ability and is quite distinct from other capacities. According to them each talent is an unitary mental entity.

But the psychological structures of different talents have not yet been fully ascertained. Therefore another group of psychologists are of the opinion that special talent tests should be classified as aptitude tests. Talents or aptitudes possessed by musicians for musical activities or the talents possessed by artists for artistic activities are termed as musical aptitudes or artistic aptitudes. Some tests have been constructed to measure these talents or aptitudes.

Most of the aptitude tests available in this area intend to measure either musical memory, interval discrimination, pitch discrimination, loudness discrimination, aesthetic judgment, artistic appreciation, abilities of visual arts and so on.

It is our common belief that more than one abilities are necessary for success in art or in music. So we generally say that a successful artist or a successful musician should possess a

few abilities. Different aptitude tests have been constructed to measure these components.

Those who intend to administer and interpret the scores of these aptitude tests should themselves possess these talents to some extent and should undergo proper training beforehand.

I. Seashore Measures of Musical Talents.

The Seashore Measures of Musical Talent has been regarded by many as a test of "ear of music". It is one of the most widely used tests of musical talent. This test has undergone several revisions and improvements. This test was revised by C. Seashore, D. Lewis and J. C. Saetvert and was published by the Psychological Corporation, New York, in 1960.

There are 6 separate tests in this test battery. Test items are presented to the subject by playing some phonograph records. Therefore the nature and pattern of presentation of stimuli always remain same. In each test item a pair of tones or a tonal sequence is presented to the subject. Originally two record faces had to be played for each separate test. This has been found by many as time consuming and troublesome. So some changes have been made. There are now two series of the test (Series A and Series B) consisting of all the 6 separate tests. In each series (A or B) only one record face is to be played for each of the 6 separate tests in the changed system.

These 6 separate tests intend to measure following aspects of musical talent.

a. Pitch discrimination.—A pair of tones, where one tone is different from another in pitch, is presented to the subject. The subject is to decide whether the second tone is higher (H) or lower (L) than the previous one. At the beginning the difference in pitch between the first and the second tone is appreciable but gradually the difference becomes very fine.

b. Loudness discrimination.—Here tones having different intensities are presented to the subject. The subject is to say whether the second tone is louder than the first one.

c. Time discrimination.—Three clicks are presented one after another. Certain time interval is given between the first and the second click. Another time interval is given between the second and the third click. The subject is to decide which interval is longer.

d. **Tone Quality or Timbre.**—Here pairs of tones are presented to the subject. In these pairs of tones the second tone differs from the first tone in quality or timbre. The subject is to discriminate them.

e. **Rhythm discrimination.**—In these tests pairs of rhythmic patterns are presented to the subject. He is to say whether the second pattern is the same or different from the first.

f. **Tonal memory.**—In this test pairs of tonal patterns (or pairs of series of tones) are played. In the second series of tones some of the tones are changed. The subject is to find out those altered elements.

This test is applicable to children of 10 years and above. The first series of the test is applicable to heterogeneous groups and the second series is applicable to more skilled students of music. A manual describing the methods of administration and scoring is available. Percentile norms both for the series A and the series B are available for subjects of different grades. Profiles are prepared for getting complete pictures.

Reliability co-efficients have been reported to be satisfactory.

Many experts are of the opinion that this test measures only a few important elements of musical talent instead of all.

2. Art Judgment Tests.

An individual may possess a high intelligence quotient but he may not possess special talent in art. Success in artistic activities is not predictable by an individual's general mental abilities. Talent in art is very often called an "aptitude for art" or artistic ability. Several studies have been made in order to identify artistic aptitude which is not the result of any schooling or training. In order to prepare a test for indentifying the artistic aptitude one has to prepare a list of abilities which are essential to doing some artistic job. After analysing the requirements of the job he will have to prepare his test items. In such tests it is very difficult to determine the validating criterion. Very often expert's opinions and judgments are taken as validating criteria.

The most well known tests in this area are (1) The Meier Test of Art Judgment, (2) The Lewerenz Test of Fundamental

Abilities in Visual Art, and (3) The Horn Art Aptitude Inventory.

Meier Art Judgment Test

Meier Art Judgment Test is an artistic judgment test. This test determines whether an individual is "a good judge of aesthetic qualities." This test is presented in a booklet form. One hundred pairs of pictures are used as test items in this test. In each page a pair of pictures is printed in black and white. In each pair of pictures there are two versions of almost the same picture with some differences. One picture is drawn either by a well-known or a reputed artist and is recognised to be more beautiful and pleasing by some expert artists. Another version is drawn on same theme but with some alterations in the symmetry, composition, balance, shading or in other techniques. Colour complications have been avoided by drawing both the pictures in black and white.

The subject is to decide which of the two versions of the picture is more pleasing to him and how they differ.

This test can be applied to all students of Junior High Schools, High Schools, Art Schools and Colleges.

Norms are available. It has been said by many people that high score obtained in this test is not a sure indicator of great success in artistic activities. But if it is noticed that an individual scores very low in this test he may be told not to enter into an art school.

Reliability of the Meier Art Test has been reported to be satisfactory. We have said that high general mental ability is not an indicator of success in artistic activities. This does not mean that artists in general possess very low intelligence. There are artists who are highly intelligent. We want to say that in addition to intelligence there are several other abilities which are essential to success in artistic activities. All those abilities jointly can predict future success in artistic activities.

Attitude Scales

Attitude refers to an individual's favourable or unfavourable beliefs and feelings towards some objects, person or persons,

idea or institution. Psychologists have prepared Attitude Scales to estimate the attitude of an individual toward religions, political issues, communism, facism, capitalism, socialism, church, birth control, labour unions, existing educational system, one's occupation and many other similar objects. Such scales are generally used by research workers in the field of industrial psychology also. They are occasionally used by Educational and Vocational Counsellors in order to get an idea about one's satisfaction in his job. Attitude scales are not exactly opinion surveys. Opinion surveys are carried on by interviewing subjects whereas attitude scales are paper and pencil tests. In an attitude scale many questions on a particular topic are assembled together in order to elicit responses from a subject. These responses will reveal the subject's attitude towards many things and ideas. Attitude indicates one's likes and dislikes also. Attitudes may be described in behavioural terms also. Scores of an attitude scale can be correlated with several other factors.

Psychologists and Sociologists generally use two methods for evaluating an individual's attitude. Those two methods are (1) direct observation method and (2) application of attitude scales. Direct observation method is used to judge one's attitude when it is expected to change and develop by some instructions. Attitude toward some persons and the scientific attitude may be evaluated by this method. Changes of attitudes may be recorded to some extent by means of rating scales, checklists and also by anecdotal records.

Attitude scales are similar to self-report inventories. But an individual's "favourable or unfavourable feelings" or opinions or attitudes can be reliably evaluated by means of attitude scales.

Different methods have been adopted by different psychologists in preparing attitude scales. Following two attitude scales may be used in high schools and colleges easily.

(a) Ascendance-submission Reaction Study published by the Houghton Mifflin Co, Boston, Mass.

(b) Study of Values (Allport-Vernon-Lindzey) published by the Houghton Mifflin Co., Boston. Mass.

Other important methods were designed by Thurstone, Remmers, and Likert.

Thurstone's Method. (Thurstone's Attitude Scale).

In Thurstone's attitude scale about 20 or more statements expressing all degrees of opinion toward some attitude-objects are presented to the subject. Every statement is given some credit. The subject is to express his favourable or unfavourable feelings towards each statement. He is to say whether he agrees with the statement or not. The most unfavourable statement is assigned a scale value of 0.0, the neutral statement is marked as 5.5 and the most favourable statement is given a scale value of 11.00.

In this scale selected statements or items were presented to a number of judges who were requested to group those statements into 11 piles. So it could be considered as a scale.

Most relevant, unambiguous statements and statements covering different degree of attitude are included in this attitude scale.

Remmer's Method.

Remmer devised a more generalised or master attitude scale. It is a time and labour saving attitude scale. Remmer's scale intends to measure attitude towards some school subjects or any vocation or any teacher and so on.

Likert's Method.

In this scale only some very clear, favourable and unfavourable statements are included. The subject is to divide the statements on a five-point scale. They are as follows :—

SA—Strongly agree, A—Agree, U—Undecided, D—Disagree and SD—Strongly disagree.

This attitude scale is more simple and can be easily marked.

EXERCISES

1. Distinguish between "abilities" and "aptitudes". Discuss the uses of aptitude tests in vocational guidance. B. T. 1965. C.U.
2. Explain how the Differential Aptitude Tests are likely to be more useful for school guidance work than tests of general intelligence. C. M. C. 1965. W. B.
3. Describe Differential Aptitude Tests. Which of these tests have been adapted in Bengali and how are they being used by Career Masters in West Bengal schools for guidance purposes? C. M. C. 1966. W. B.

CHAPTER VIII

OCCUPATIONAL INFORMATION

What is Occupational Information—Need For Occupational Information—Occupational Information and the Counsellor—Occupational Information at Different Stages of Schools—From where to collect Occupational Information—How to Maintain Occupational Information by the School Authorities—Dissemination of Occupational Information—Group Method and Individual Method of Disseminating Occupational Information—Classification of Occupations into Groups and Families.

Vocational guidance is a process wherein a counsellor is to assist an individual to understand and recognise his own abilities and liabilities, to select an occupation suitable to him and to be successful in the selected occupation. In Vocational Guidance work a counsellor is to take into account the student's aspirations, goals, drives, needs and the opportunities present before him.

(It is essential to acquaint all students with information regarding different courses and occupations. Individual differences are there, so a particular occupation may not be suitable for all students. Therefore students should be provided with information concerning several occupations. In helping his students in career planning a counsellor will have to collect career information in great quantity and to arouse their interest in the occupations which are suited to their values, aptitudes, abilities and interests.)

There are some people who think that a Vocational Guidance Counsellor will study the assets and liabilities of the student and will tell him what vocation will be suitable for him. But according to the accepted concept of Vocational Guidance a counsellor is to aid a student to make his own decision, to select an occupation, to enter into it, to prepare himself for it and to prosper in it. The counsellor as a specialist will only guide the student.

In the Chapter on placement and job analysis it has been discussed what kind of information concerning occupations are essential for students in making their career plans. It has been realised by our social and educational leaders that occupational

information should be supplied to our students at any cost. Bureau of Educational and Psychological Research, Calcutta, has published several monographs and bulletins in order to disseminate occupational information to pupils. Analysis and classification of a large number of occupations were done in that Bureau. Now-a-days Employment Exchanges, the Ministry of Defence and Educational and Vocational Guidance Bureaux of different state Governments of India are regularly publishing Manuals and Monographs for disseminating occupational information.

What is Occupational Information.

Occupational information includes many important facts and figures about various jobs and occupations which are available in the country. Willey and Andrew¹, has defined occupational information "as accurate, current analysis and interpretation of data pertinent to the process of occupational selection, preparation, placement, and adjustment." Before making Vocational selection a student should be provided with adequate description of jobs available at the local community and in distant places.

Students may get jobs in industries, commercial firms, Government Offices and in other places. In each office again there may be different types of jobs and job requirements. All existing occupations should be classified and grouped into different job categories in order to enable the student to understand the whole occupational world.

(Occupational information should include the following facts in addition to other things.

(a) A description of the job, that is the duties to be performed in the job.

(b) The working conditions which refer to duty hours (whether to work during day time or at night), indoor or outdoor work, holidays allowed, physical condition of the working place and the type of fellow workers.

(c) There should be detailed description of educational qualifications and practical training required for entrance into the job and for success in it. There should be some hint about

1. R. D. Willey and D. C. Andrew—Modern Methods and Techniques in Guidance. Harper and Brothers. New York, 1955.

the nature of mental ability, aptitude, interest pattern, physical fitness required for success in the job.

(d) The remunerations such as pay, other allowances, medical allowances, house rent allowance, pension or provident fund, gratuity, mental satisfaction and the like which are provided should be clearly stated.

(e) Future opportunities and prospects in the occupation are to be discussed beforehand.

(f) Various other advantages and disadvantages that are involved in the job should be known.)

The Counsellor should keep information of the socioeconomic factors which generally influence occupational trends and requirements. Different occupations may suit different individuals possessing below average, average or above average abilities. Other things which are to be stated refer to preparation for the job and proper adjustment to it.

Need for Occupational Information.

(As career planning is a complex process students need some assistance from experienced persons in making their career plans. The counsellor will help the student to make his own choice of vocations but the actual choice is to be made by the student himself. After considering his own abilities and aptitudes and the requirements of the job a student may have to make some changes within himself and his environment. It is possible on the part of a student to decide and select a particular occupation which seems to be most appropriate for him only when he comes to know all facts and figures about the different employment avenues available. Out of many he will have to select one. If after examining many he selects one his feeling of security will be increased. Again, as he has himself selected the occupation he will exert his full energy to be successful in it.

In India during these years employment potentialities are curbing day by day, particularly owing to present recession in business and industry. Before independence our industry could not develop according to needs of the country. It is only after independence our Government is trying to establish new industries and creating new avenues of employment. But

creation of new avenues of employment is much smaller in comparison to the abnormal increase in number of educated persons seeking employment. Candidates are much greater in number than jobs available. Too many candidates rush in for a single job. But there are still some avenues which are not very well known to our students. All information, therefore, about available jobs should be made known to all students, particularly to those who are leaving their schools and colleges or are on the lookout for some job. Correct occupational information is necessary for all students. Our Government is giving more emphasis on agriculture and food production. In an agricultural country like India most of our pupils will have to be absorbed in agricultural work. So information about occupations concerning agriculture should be provided to our students regularly.

Occupational information is necessary both for the individual student and for the society. Upto now we could not make necessary arrangements for supplying proper occupational information to our boys and girls who are leaving educational institutions and are entering into the world of work. Whatever information they gather either through their friends and senior members of their family may not be all. Again the information gathered from other sources may not be correct. Students with high aspirations but low abilities may not like to enter into a job which is suitable for them in consideration of their abilities and aptitudes. If a student enters into a job being encouraged by wrong information, there may be bewilderment and frustration in course of time. If he fails to get any interest in his work he will lose his personal felicity. So he will either give up that job or drudge along it some how and kill his time. He will gradually become an unwanted worker to his employer. It will not only be a loss to his employer but a national wastage too. If manpower is allowed to be wasted in this way no country will be able to develop its industry and national prosperity will be hampered. A poor country like India cannot afford to incur such a loss, particularly when it is trying to reconstruct the country in various ways. Most of our children and parents prefer white-collar jobs. It can be safely said that if proper

occupational information is provided to all there will be no place for prejudice and wrong selection of occupations.

Our Government has so far introduced three Five-Year Plans and is going to introduce the Fourth Five-Year Plan very soon. The Planning Commission is drawing up new plans for our social and economic development. Community Development Projects and several other schemes have since been introduced. We are encouraging both private and public enterprises. Several small scale and heavy industries have been established in our country. These industries require a large number of trained personnels. Unless adequate provisions are made for providing information about these new avenues of employment to our students how can they be expected to prepare themselves for these jobs. Industries will also not get sufficient number of workers.

There is no denying of the fact that educational institutions will educate their students to be good citizens and real men. But they will have to prepare their students for future occupations also. We want that a student should get real education and at the sametime we want that he should be capable of entering into an occupation, to achieve success in the occupation and get happiness in life. Therefore teachers and counsellors will have to gather correct information about the requirments and scopes of different types of occupations avaiable in the country. On the basis of such information our curriculum may have to be modified. Even our present educational schemes and training programmes may have to be changed in order to meet the requirements of the industrial devolpment of the country. If we cannot produce a large number of efficient and sincere workers in our schools and colleges we will fail to prosper.

It will not be sufficient to collect occupational information and to revise the curriculum but these will have to be disseminated to all students. Such a process will help our students in selecting their courses of studies.

Occupational Information and the Counsellor.

Occupational information is very helpful to the counsellor. He can use it in the following ways at the time of counselling interview.

1. "Exploratory Use." He can prepare a long list of occupations and present it to his students in order to give them a fair idea of the world of work.
2. "Information Use." He can help his students to study a few occupations thoroughly.
3. "Motivational Use." By presenting a long list of occupations he can motivate his students to prosecute further higher studies and make correct vocational decisions.
4. "Assurance Use." The Counsellor can assure his student that he has made a correct or an incorrect Vocational decision.
5. "Holding Use." Occupational information will keep the student in constant touch with the counsellor until he enters into an appropriate vocation.
6. "Evaluation Use." By presenting occupational information chart the counsellor may assist his student in ascertaining whether his knowledge and understanding of a particular occupation is accurate or inaccurate.

From above discussions it is very clear that for correct and wise vocational choice collection and dissemination of occupational information is essential.

Occupational Information at Different Stages of Schools.

It will be beneficial to all students if they are provided with elementary knowledge of the occupational patterns and trends of occupations available in the country. Although more detailed occupational information should be given to students while they leave schools and colleges still it is desirable to begin from the elementary school level. As vocational guidance is a continuous process it should begin early in life and continue till the end of the schooling period.

At Elementary School Stage.

It is an accepted fact that our aim is to give general education at the elementary stage, but our purpose will be better served if we prepare the students for their future vocations from this stage. Children should understand that all lawful occupations are to be respected and are necessary for the prosperity of

the nation. At this stage their interests should be aroused in all occupations. Gandhiji said that our children should be made to understand the dignity of labour. From the very beginning they should get the idea that there are respectful occupations other than arm-chair professions and white-collar jobs. That is why stories about activities of village blacksmiths, potters and fishermen are taught to our very young children now-a-day. As childhood sets in the stage for future vocational choice some sort of vocational guidance should be given at this stage. As occupational information is the most important constituent of vocational guidance programme there should be provision for the dissemination of occupational information even at the elementary school level.

We may arouse children's interests in occupations followed by their parents and other senior family members. They should see and understand what type of skill and qualifications are required for success in different jobs. They can be given ideas about various occupations through different extra-curricular activities and hobbies such as drawing, gardening, modelling and story building. Educational tours and excursions are very helpful in giving some idea about the world of work.

In the elementary stage we need not go into details and provide occupational information in a general way. Our purpose will be just to develop favourable attitude towards all useful work, to extend their occupational horizons and to satisfy their natural curiosity.

At Junior High School Stage.

At this stage a student will make preliminary selection of his future occupation and choose his course of study in order to prepare himself for it. The counsellor will have to teach the student how to review the world of work in general and a few jobs most critically. Career planning should be done at the Junior High School stage very carefully because decision made at this stage will have profound effect on occupational decisions made at the high school and post-high school stages. A student who intends to become an engineer will take the science course before entering into an Engineering College. The nature of courses of studies will naturally depend upon the vocation selected. If a

student is to review the world of work before making his vocational decision he should receive detailed information about the over-all occupational patterns of the country. A student of the Junior High School stage should be placed in the position of an explorer. He will know "about broad fields of work", determine what course of study will lead to a particular vocation, try to gather accurate and up-to-date information about a specific job and to examine their merits and demerits.

At Senior High School stage.

At the earlier stage a student makes a tentative career plan but before leaving the Senior High School stage he will have to make his final vocational decision in consideration to his abilities, aptitudes, interest, maturity and need. In the Senior High School stage a pupil will have to select a specific job and prepare himself for it. Here also we should say that decision made at the Senior High School stage may not be final in all cases. Owing to various reasons one may have to change his profession even at some later stage. But they are exceptional cases and need not be generalised. Occupational information is a must at this stage.

At this stage pupils should know what the various offices and industries are, which absorb a large number of workers. They should know the names of the different educational institutions which prepare pupils for various professions. They should also be informed of the names of the educational institutions which offer practical training to pupils. They should be made familiar with the names of different prospective employers and the nature of workers they need. They should also know if there be any provision for in-service training.

Placement facilities have been discussed in a chapter on Placement Service.

From where to collect occupational Information.

Occupational information can be collected by the school authorities from the following official and non-official agencies.

1. *Local Employment Exchanges.* According to existing laws all big employers (employing more than 25 persons) are to notify all their vacancies to the local Employment Exchange.

The National Employment Service Department has a branch for collecting information about various occupational opportunities available in the country. They publish manuals and pamphlets from time to time. The school counsellor can collect all these occupational information from them.

2. *Newspaper Advertisements.* Employers generally advertise their vacancies through widely circulated newspapers. Information regarding careers are also published in journals, career magazines and notice boards of various factories. These are the most important sources of occupational information.

3. *Educational and Vocational Guidance Bureau.* Guidance programme is becoming very popular now-a-days. Almost all the State Governments have established Educational and Vocational Guidance Bureaus. Such Bureaus collect occupational information and supply those information to school authorities. The Bureau of Educational and Psychological Research, Calcutta, has published a Monograph on occupational information. Other Bureaus, the Ministry of Labour and Employment, the Ministry of Education, the Ministry of Defence Services have circulated many pamphlets about occupational information. These pamphlets may be collected by the school authorities.

4. *All India Private, Local Private and Public Agencies.* The Y.M.C.A, the Rotary Clubs and similar other public and private agencies collect occupational information for use of their members and public in general. Latest information regarding occupational avenues may be collected from them also.

5. *Through Visit to Factories, Commercial Firms and Industrial Concerns.* School authorities may take their students on excursions to visit different factories, commercial firms and other industrial concerns. In such visits students will actually see how people work and what kind of jobs are done there. Students will be able to talk with men at work and get a vivid picture about the world of work. During their visits to those places students may get information about future vacancies also.

6. *Specially Prepared Books, Digests and the Occupational Index.* Although in India we have a few such publications the U. S. A has so far published many books on occupational information.

Names of some of them are given below.

a) Dictionary of Occupational Titles. The U.S.A Employment Service Department.

b) The Occupational Index. New York, INC.

(c) Vocational Guidance Digest. Stanford University Press.

(d) Occupations : The Vocational Guidance Magazine. National Vocational Guidance Association. INC. New York.

(e) S. R. A. Career Information Kit. Science Research Associates. Chicago.

Counsellors and teachers can consult abovementioned publications for getting information regarding occupations.

How To Maintain Occupational Information By The School Authorities.

The Counsellor should properly do the cataloguing, filing and placing work of all occupational information collected from various sources. He himself can develop filing system or can purchase some filing forms from commercial firms. He can follow the following filing systems also.

1. Alphabetical Order. All occupational information may be filed in an alphabetical order when they are small in number.

2. According to connection with School subjects. If the Counsellor so likes he can file occupational information subjectwise. This system will be helpful to students reading a particular subject in collecting information regarding educational institutions and training centres offering higher instructions in the subject in which he is interested.

3. According to Occupational Family or National system of classification of occupations. The counsellor can file occupational information according to the internationally accepted system of classification of occupations. Occupations have been classified into different families and groups according to the abilities and aptitudes necessary for successful performance of them. A code number and title is given to each occupation. The counsellor can consult the Dictionary of Occupational Titles for this purpose.

Dissemination Of Occupational Information.

The responsibility of a counsellor will not end only with the collection and filing of occupational information. But he should

see that those information are properly disseminated and used by students, teachers and parents from time to time. He can adopt the following two methods for dissemination of occupational information.

1. Individual Method. —In this method he can propagate information to an individual student at the time of counselling interview.

2. Group Method.—In this method he can disseminate occupational information to a group of students at a time. Here he disseminates educational and occupational information to students in groups. The Group Method has several advantages. Hoppock¹ has pointed out following advantages of the group method.

a. In the Group Method a large number of general questions can be answered to a group of students at a time. It will save much of the counsellor's time.

b. Group method will provide some introductory knowledge about occupations to students and will prepare a back ground for future discussion of personal problems with the counsellor at the time of individual counselling.

c. It will enable the counsellor to know his students better, particularly those students who are badly in need of counselling.

d. Common problems can be discussed in the group of students. The nature of common problems will in this way be known to all.

e. As the counsellor will have to face a group of students he will be forced to keep several up-to-date information in order to answer the different types of questions put by different students. So the group method will increase the competency of the counsellor.

f. Everybody will recognise the necessity of occupational information.

1. R. Hoppock. Occupational Information, Mc-Graw Hill, New York, 1957.

Different Ways Of Group Method Of Disseminating Occupational Information.

There are several methods by which occupational information can be disseminated in groups. A few of them are mentioned below.

1. Occupational Information As a Separate Subject.

There are some people who are of opinion that guidance and occupational information should be organised as a regular and independent school subject. It should be taught in regular classes for giving students educational and occupational information. Detailed study about too many occupations need not be done. Students reading this subject should be taught to evaluate their abilities and interests for related vocations. Some how or other they should get an idea about the world of work. Following topics may be included in such a course. Students should learn how to carry on studies most effectively, how to adjust themselves to the school situation, how to make self-analysis, how to choose a course of study, what occupations are suitable for a student possessing high degree of mechanical aptitude and what careers are suitable for science students. They should learn what occupations are available in the fields of arts, music, social service, agriculture and teaching. They should be told what duties are to be performed in clerical work. They should also know what the conditions of an occupation are. They should get a clear idea about the abilities required to be successful in a job and specific services to be rendered in it. They should know how to apply for a particular job, how to prepare for it, how to get promotion and how to come to be liked by fellow workers and the employer.

Field trips, visits to different factories and industrial concerns should be organised from time to time in order to give students a first-hand knowledge and real impression about the actual work done by other members of the community. Help of audio-visual appliances, such as, films, magic lantern slides, television etc. may be used.

There should be properly trained and qualified teachers in the school to teach this subject. Students should be encouraged

to collect information about occupations and a sense of respect for all types of jobs should be developed in them.

2. Occupational Information as a special Unit in any one of the existing school subjects.

There are teachers who think that our school curriculum is already over crowded and it is not possible to introduce occupational information as a separate subject because that will become an extra load upon our students. Again it will be very difficult to get a duly qualified teacher capable of teaching this subject. So they recommended that occupational information should be treated as a special unit in any one of the existing school subjects. We will have to train a large number of teachers capable of teaching this subject.

Information concerning a vocation should be considered as a unit of the subject which is related to the vocation. Occupational information units may be linked with subjects like English, Mathematics, Science, Social studies and so on. A fixed block of time within the allotted time for the main school subject should be devoted to the study of occupational information. Method of self-analysis, occupational analysis, vocational choices, how to get a job, how to prepare for a job and how to prosper in a job should be taught.

3. Career Conference or the Vocational Information Conference or Career Day.

Occasional holding of career conferences of teachers, students, parents and other experts is another good method of presenting occupational information to a large group of students. Career conference will enable students to explore more fields of occupation, to get a clear perspective of actual work done by men engaged in different occupations and to know how to progress in an occupation.

Career conference has been named by different authors as "the vocational information conference" or "Career day". Parents, students, teachers and persons engaged in various occupations meet together for a few hours or a few days and discuss about different types of jobs available in the country. Persons engaged in different occupations are invited to speak

about the job opportunities in their fields. Discussions are held jointly and in groups.

Uses of Career Conference.

Such conferences have following advantages :

(i) Through career conferences students will be able to get up-to date information about various occupations from people who are actually engaged in occupations.

(ii) It will give students some idea about the scopes of different jobs and employment trends.

(iii) It will acquaint students with the entrance requirements into other schools, colleges, and various occupations.

(iv) It will help students to get information about new occupational possibilities and broaden their knowledge of the world of work.

(v) It will stimulate students to exert more efforts in order to prepare themselves for future occupations.

(vi) It will teach them many other things, such as, how to plan a conference, how to receive invited guests, give publicity, organisation of a conference, report writing and preparation of exhibits.

(vii) In such conferences students may come into close contact of guest lecturer, faculty members, other students, alumni and parents. Such personal contact may be helpful to their future placement.

Conferences may be held on the district or regional basis. Such conferences should be organised every year. After the general session the whole group should be divided into several groups and separate group discussions should be held on one occupational family at a time. Experts and guest lecturers interested in a particular occupational family will join the group discussing that occupational family.

Students will not sit there as passive listeners but actively participate in the actual deliberations of the conference. They are at liberty to join different groups discussing different occupational families which they think are related to their own interests, aptitudes and abilities. Some schools prefer to hold conference at the beginning of the year whereas others think that it should be held at the end of the year.

There may be separate sessions for students, teachers and parents.

I. Students' Sessions.—In this session students may have discussions about their own problems. A few students may be allowed to read articles and poems written by them. There may be provision for some recreational activities also.

II. Teachers' Sessions.—Teachers may meet together to discuss various aspects of the school guidance programme. Parents, representatives of the National Employment Service and representatives of the State Bureau of Educational and Vocational Guidance may also be invited to participate in Teachers' Sessions.

III. Parents' Sessions.—In such a session parents, teachers and others connected with Youth Employment Service should join. Symposiums may be organised on some common problems related to future occupations of students. It is expected that many important points will be discussed in such sessions. In such sessions also there should be provisions for some recreational activities.

Organisation of Career Conference.

In order to make a career conference successful it should be properly planned and organised. Thorough preparation should be made long before the actual time of conference. The organisers of a career conference should consider the following points before organising such a conference.

(i) A Planning Committee, with the counsellor as the chairman, should be constituted much ahead for organising and conducting the conference. A few students and teachers should be included in this Planning Committee. Several sub-committees may also be formed for looking after different aspects.

A well-thought-out and detailed programme should be prepared by this committee. Different groups of students should be entrusted with different activities connected with the conference.

(ii) A whole-hearted co-operation of all students, teachers, parents and members of the Managing Committee of the school will be necessary for the success of the conference.

(iii) A long list of the students who will join the conference and are expected to be benefited by it should be prepared. All

such students will have to be informed of the date, time and place of the conference.

(iv) The counsellor will have to survey his student's vocational interests. On the basis of this survey the topics to be discussed in the conference will be decided.

(v) All teachers, students, parents and external experts, who are expected to participate in the deliberations of the conference, will have to be informed of the topics which will be discussed in the conference. This will enable them to prepare themselves for the conference.

(vi) The purpose, date, time and place of the conference should be well publicized in advance.

(vii) There should be arrangement for writing of reports of the conference and its evaluation work.

(viii) Services rendered by all persons should be duly acknowledged.

Some Criticisms of Career Conferences.

There are persons who think that for following reasons career conferences very often become ineffective. Some criticisms are stated below.

a. Very often students come to career conferences without any previous preparation. As a result they either do not participate in the deliberations or raise irrelevant points.

b. It may develop an idea amongst common people that the entire vocational guidance programme means a few career conferences.

c. Only big officers and departmental heads of state Governments and industrial concerns are very often invited to speak before students. Skilled and semi-skilled workers are seldom requested to attend such conferences. All students will not become officers and professional experts. A large number of students will become skilled and semi-skilled workers. So this large group of students may not get adequate information necessary for them from those big officers and departmental heads.

4. Through Visits to different places and Excursions.

If senior students are taken to visit factories, industrial con-

cerns, mercantile firms, Government offices and other places of work, they will get first-hand idea about the type of work done by grown up peoples engaged in different types of occupations. In such conducted tours a Public Relations Officer or any other representative of the employer generally takes students round the office or the factory. The P.R.O. will explain to students everything regarding the type of work done by workers there. Students may know many things from him by putting questions to him. Students can talk with actual workers and can know many things from them also. So through such visits to different places of employment students will be able to collect occupational information.

5. Through Work Experience

Another method of disseminating occupational information is known as the "work experience programme". This "work experience programme" is sometimes called the "Co-operative education" method. Boys and girls will actually work in a factory or in a business concern for some time along with normal workers. By actually working in a factory or office they will get real idea about the work done there under normal conditions. In some engineering and applied science courses there is provision for some practical training in some industries as soon as the theoretical portion of the curriculum is finished.

There may be two conditions as regards wages of students during the practical training period. In one case students may be paid some wages by the employer for the services rendered by them. In another case students will give voluntary services. The second condition is most widely accepted system in the guidance programme because students go there to learn. They go there of their own accord and its educative value is much more precious than its wage values.

"Work experience programme" will have to be fixed by the school authorities in consultation with the employers. The employers should co-operate with the school authorities otherwise the whole programme will be a failure.

This programme brings the school and the community together. So this programme is very often named as the pro-

gramme of "co-operative education" also. In this programme each and every student will have to devote some of his time and energy for the upliftment of the community before leaving educational institutions. A student will get some idea about the nature of "opportunities for community service" open to students.

The next question is to what occupations students will get work experience. All occupations are not suitable for all students. Before sending a student to a place of occupation the Counsellor will determine whether that work experience will meet the needs of the student or of his group. He should examine whether the work experience will teach specific skill and is related to the education imparted in the school. Whether work experience will supplement the knowledge gathered in the school? Whether the work experience is within the financial capacity of the parents? After considering all these points a counsellor will depute his students to receive work experience from an occupation.

Before organising such a programme the counsellor should take into consideration the following points.

a) A student should work in a place of occupation for two to three weeks. He should work at least for fifteen hours per week. The place of work should be situated within the same locality.

b) A few hours out of each of this fifteen hours per week routine should be spent in the school. Theoretical information relating to jobs may be given in the school simultaneously. One hour per week may serve this purpose.

c) Every student will have to prepare his work report and submit a report every week to the school counsellor.

d) The employer will make all arrangements for the proper practical training of the student.

e) The employer should pay the wages of the students regularly if services are rendered in exchange of some wages.

f) The employer will give a report about the actual work done by the student during that period.

g) If there be any problem the employer and the school counsellor will jointly try to solve it.

h) The school should give full credit for such work. Such practical work should in no case be regarded as inferior than a regular school subject.

i) Before sending a student to a place of occupation due permission of his parents should be obtained.

While working there students will freely mix and talk with the regular workers. Students will dine with them in the same office canteen. It is quite likely that through personal contact with the regular workers during work experience period students will get some occupational information from them.

6. Guidance Corner and Bulletin Board

Occupational information and particulars about different courses of studies can be disseminated through the School Guidance Corner. A suitable place in the school building is selected to instal the Guidance Corner. It should be a public place and accessible to all. A nameplate on which are written the words "Vocational Guidance Corner" should be hung there. A big asbestos or wooden board or paste board is fixed either on the wall or on some poles. A few chairs, tables and show cases are kept in this place. Different charts, posters, maps, diagrams, bulletins, booklets and pamphlets disseminating information on occupations and courses of studies are displayed on this spacious board. Some models may be kept in the show cases. This big board is called by many as the "Bulletin Board" and the whole arrangement is called the Guidance Corner. In some schools it is named as the Career Information Centre.

New additions of guidance literatures in the library may be notified in the Guidance Corner. Good writings of students, newspaper cuttings bearing information about new avenues of employment and copies of publications of Educational and Vocational Guidance Bureaus may be displayed in the Guidance Corner.

Copies of advertisements of the Union Public Service Commission, State Public Service Commission, Railway Service Commission, Post and Telegraphs Department and advertise-

ments of other employing authorities may be displayed in this corner. Information regarding different competitive examinations, apprenticeship courses and practical training facilities may be flashed in this corner. Rules and regulations of different colleges and information about various state scholarships may also be given to students through this corner.

Pupils residing in big cities may get information about courses and careers easily but it is not so easy for students living in rural areas. Therefore each and every school should organise a Guidance Corner for the benefit of their students. Students will surely be inspired by such an arrangement.

Several specially drawn up large wall pictures depicting people at work in big factories and industrial concerns may be displayed in this corner.

The Guidance Corner should be protected from natural calamities. Nobody should be allowed to remove anything from the Guidance Corner. The Guidance Corner will be open to parents, teachers and students. Students, if they like, may copy any information but will not be allowed to borrow anything for use at home.

The Guidance Corner should be neat and clean. Too many cumbrous and unnecessary materials should not be displayed there. The corner should be simply but beautifully decorated.

7. Guidance Exhibition.

Guidance exhibitions can be organised by school authorities from time to time in order to disseminate educational and occupational information. A Guidance Exhibition can be organised on several occasions, such as, School Foundation Day, Prize Distribution Day, Parent-Teacher Association Day and during Career Conferences.

Charts, posters, models and other exhibits may be prepared by students themselves. The counsellor and other teachers will help the students in preparing the exhibits.

Generally State Bureaus of Educational and Vocational Guidance maintain a permanent "Exhibition Unit". These Bureaus prepare and maintain a large number of charts, posters, models and other exhibits. They themselves organise Guidance Exhibitions from time to time and also lend the exhibits to differ-

ent schools who organise such exhibitions. But the number of their exhibits are likely to be quite insufficient to meet the necessities of all the schools of the state. Again the exhibits of a particular Bureau may not be suitable for each and every school. Therefore it is desirable that all schools will prepare their own exhibits. If they so desire they may borrow some materials from the State Bureaus.

8. Dramatisation and Role-play.

Dramatisations and role-plays are other methods for disseminating occupational information and for pre-Vocational Orientation of students. Students or Teachers or any other person may write one act plays so that students may organise dramatic performances. It may so happen that the story tells us how a student got the occupational information, how he applied for the job, appeared before the selection committee, got the job, worked for a month and returning joyfully to his mother with his first month's salary. Such one act plays depicting working conditions of different types of jobs can be written and staged at the school. Parents also can be invited to attend such dramatic performances. Role-play has been discussed elsewhere.

9. Career Talks by Specialists.

Another popular method of dissemination of occupational information is the well-planned Career Talk. Such talks may be delivered by a business man, an industrialist or a Government Official serving either in the Employment Exchange or in the Ministry of Labour. A member of the Chamber of Commerce or an old student of the school engaged in some skilled or semi-skilled job may also be requested to give a talk to present students.

The group of students to whom talks will be delivered should not be very large. Only students who are going to leave the school and are expected to enter into some job should be allowed to attend it. If the group is small each and every student will be able to participate actively. The subject of the talk should be related to a course of study that will lead to a future occupation. The topic on which the speaker will give his talk should be explained to students much ahead so that they get sufficient time to think over the matter. After each talk some time will

be given for putting questions to the speaker. Questions put to the speaker should be meaningful and relevant. This system will give students a clear idea about the world of work and enable them to make a correct choice of occupations.

The School Counsellor will have to see the guest speaker much ahead and he will arrange with him the date and time of the talk. The speaker should be briefed about the guidance programme and the topic of the talk beforehand. He should be aware of the academic achievements and aims of the students to whom he is to deliver the talk. Generally 25 to 30 minutes should be allotted to the talk and another 15 minutes should be allotted to putting questions by students. The guest lecturer should not take more time because it may create much inconvenience and may disturb the school time table. It will be ideal if such talks are held within the school hours.

As soon as the guest lecturer comes to the school for delivering his talk he should be warmly received. Thanks should be extended to him and his services should be duly acknowledged.

Documentary film shows and excursions to some industrial and commercial concerns can be arranged within a few days after the career talk for practical knowledge.

10. Class Talk by the Counsellor.

Class talk by the counsellor is another method for disseminating information about courses and careers. In this method instead of an outside speaker the school counsellor delivers the talk. Here the Counsellor can discuss with his students about various courses of studies and fields of work.

Students of classes IX, X and XI of the school will be highly benefited by class talks. It will help them much in the choice of their courses and careers. The counsellor can give talks on the following topics :

- (a) The Guidance Programme of the School.
- (b) Different streams of courses of studies that are provided in the school.
- (c) To what occupations the Science Course will lead.
- (d) To what occupations the Commerce Course will lead.
- (e) Similar other topics may also be selected.

The School counsellor can give talks on problems relating to the defence of the country and information about different types of jobs available in the Defence Department. Topics may be of the following nature :

- (a) The meaning of the word Nation.
- (b) Relationship between the Nation and the individual.
- (c) What emergency is ?
- (d) Responsibilities of an Indian citizen during an emergency period.
- (e) Avenues of employment and scopes in the Indian Army, the Indian Navy and the Indian Air Force.
- (f) What Emergency Commissions are, and
- (g) the aims and objectives of Civil Defence.

This method has its limitations also. It is true that the school counsellor may not know all aspects of a particular kind of job. He may not know the specific working conditions of engineering jobs and many other things. That is why students like to hear from a man who is actually engaged in that occupation.

Merits of This Method.

This method is very useful for various reasons. The counsellor is the most competent person to deliver class talks because he knows his students well. He is aware of the necessities of his students. He is capable of relating the talk to other guidance activities of the school.

From the administrative point of view this method is very good. The Counsellor can deliver his talk during a school period without hampering the existing school time-table.

When the talk is given by the school counsellor students will feel at home, actively participate and will more freely put questions. This may not be the condition before a stranger. This will enable students to get a clear idea about the world of work.

The Counsellor knows better the specific problems of his students and which points need to be emphasized.

11. School Clubs.

Our schools should organise hobby clubs, career clubs,

curriculum clubs, radio clubs, camera clubs etc. Various programmes and projects can be undertaken by these school clubs in consultation with the school counsellor. Debates on different occupations can be organised by these clubs.

In the radio club there can be discussions about careers connected with radio and electronics. In the camera club there may be discussions about careers connected with photography and cinematology.

By undertaking such programmes school clubs may help the process of dissemination of occupational information.

12. Library.

If properly planned and organised, the school library will be able to render splendid services in this area. The library is regarded as a very powerful disseminating agent of occupational information. It is very often regarded as the best medium for implementing the guidance programme and its main functionary. A large number of up-to-date career pamphlets, booklets stating how to apply for a job, how to get a job, how to prepare for a job, how to improve qualifications and catalogues of different colleges and schools should be collected in the library. All these materials should be made available to parents and students.

It will be good if there be a separate and special guidance library in the school. If it is not possible to establish such a separate library there may be a section named as the "Guidance Section" in the main school library. There should be a separate "Guidance reading room" in the school library. It will be very good if each class is provided with an almirah consisting of different types of guidance materials in addition to books of general interest.

Students will be able to gather information about different occupations by reading books, journals, pamphlets, bulletins and magazines kept in the library. Different audio-visual aids (maps, charts, posters) and other instructional materials may be kept in the library. Recent Government reports and publications should also be retained there.

All pamphlets and guidance materials other than books, catalogues and magazines concerning a particular vocation may

be kept in a single file folder. Name of the vocation or the field of guidance with which it is concerned should be boldly written on the top of the file folder. A student interested in the vocation shown on the file folder will be able to know many things from a single file folder and much of his time and energy will be saved.

The library service will be helpful if both the librarian and the counsellor co-operate. The librarian should be a man of parts, emotionally stable and should have fair knowledge of the Educational and Vocational Guidance programme.

Guidance materials are numerous, ever changing and ever increasing with data on new types of jobs created in the locality. The following types of materials should be collected in the school guidance library.

I. Publications.

(a) Occupational Monographs published by the Central Bureau of Educational and Vocational Guidance and other State Bureaus. These monographs will give the students ideas about the nature of several occupations, number of employees required, qualifications required, methods of preparation, working conditions, salary offered and other information about jobs.

(b) Occupational Abstracts—Summaries and abstracts (within 3000 words) from different available occupational literatures.

(c) Job Descriptions. Booklets stating different facts about a particular job.

(d) Occupational Fictions. Description of occupational life through fictitious characters.

(e) School Publications for disseminating occupational information.

(f) Text Books on Vocations.

(g) Biographies of successful workers.

(h) Bulletins published by different public organisations, such as, Y.M.C.A., Chambers of Commerce and Foreign Embassies.

(i) Defence Department Notifications.

(j) Dictionary of Occupational Titles. Vol I, II and part IV.

(k) Occupational Outlook Quarterly, Vocational Guidance Quarterly, Occupational Outlook Handbook etc. etc.

(l) Some publications of the National Institute of Industrial Psychology, London and National Foundation for Educational Research in England and Wales, London, can be maintained for giving occupational information available in England.

II. *Audio-Visual Materials and Other Aids.*

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|--------------------------------|-------------------------|
| (a) Slides and Magic Lanterns. | (e) Bulletin-board. |
| (b) Films and Projectors. | (f) Paper-cuttings. |
| (c) Tape Recorder. | (g) Radio and T.V.Sets. |
| (d) Charts and Posters. | |

III. *Socio-drama and Role-Playing materials written by students and counsellors.*

13. Audio-Visual Aids.

In addition to some visual aids like charts, posters, bulletin boards, maps and printed books a few selected audio-visual aids may be used for disseminating educational and career information. For guidance purposes following audio-visual aids can be used.

(a) Crawl or Roll Drum. It consists of a long roll of paper on which are written a list of occupations and their requirements. This roll of paper is mounted on the cylindrical face of a drum. By revolving the drum slowly particulars about a single job can be shown at a time and explained verbally by the counsellor.

- (b) Flash Cards.
- (c) Magic Lantern and Stereoscope.
- (d) Tape Recorder.
- (e) Film projected by an overhead Projector even in a lighted room.
- (f) Opaque Projector for projecting any opaque material.
- (g) Motion pictures and documentary films.
- (h) Radio Set.
- (i) Television Set.
- (j) Teaching Machine.
- (k) Khaddargraph just like a flannelgraph. The counsellor will have to explain all the pictures shown in the Khaddargraph.
- (l) Puppet Drama.

Individual Method of Dissemination of Occupational Information.

Most of the students will fail to make their final choice of occupation unless they are individually counselled by the school counsellor.

Group method will prepare the background and will act as complementary to the individual method. Individual differences are there ; so each and every student will require a definite kind of assistance from the counsellor in choosing his career. Individual method is particularly necessary in cases of backwardness and personality disorders.

We have discussed elsewhere how a counsellor will interview an individual student and help him in choosing an educational stream and a career.

Personal interview and counselling will be necessary in most cases. Therefore a combination of the group method and the individual method will be the most effective and appropriate method for dissemination of occupational information.

Classification of Occupations into Groups and Families

It is expected that a counsellor will be fairly familiar with the world of work. But there are hundreds and thousands of different kinds of jobs available in the country. So it may not be possible for him to familiarize himself with all these occupations. It is impossible to acquaint all students with information about all kinds of jobs. At the same time this is not necessary.

We have learnt that different degrees of abilities, interests, skills and aptitudes are required for successful performance of different jobs.

Again a number of occupations require common abilities and skills for their pursuit. Occupations which require common abilities and aptitudes for their pursuit may be grouped in a few categories. Such groups of occupations and categories of occupations are known as occupational families. During the World War II it was necessary to classify occupations into number of families.

The Counsellor should be capable of determining the relationships that exist among occupations. Classification of

occupations into different families will help an employer to transfer his employees from one branch to another if it is known that the training, skill and abilities required in both the branches are similar. As for example a precision instrument maker working in the Indian Air Force may be asked to work as an aircraft mechanic or as a camera machinist because he is expected to possess similar skills and abilities.

A broad method of classification of occupations has been used in the Dictionary of Occupational Titles.

According to the system accepted in America in the National Classification of Occupations, all the available occupations are divided into 11 divisions. These eleven divisions are divided into 75 occupational groups. These 75 occupational groups are again divided into 331 occupational families.

Shartle₁ has divided occupations into several groups in the following way.

1. *"Professional and Managerial Occupations."*

"Professional." These occupations require an advanced level of educational achievement and a high degree of mental abilities. Doctors, lawyers, engineers, physicists, chemists and editors belong to this category.

"Semi-professional." These occupations require lesser degree of theoretical and practical knowledge and mental abilities than professional occupations. Aviators, Craftsmen, Laboratory technicians belong to this category.

"Managerial and Official." Men in such occupations are to make plans, policies and supervise other workers. Office Managers, Factory Managers, Managing Directors and Principals belong to this category.

2. *"Clerical and Sales Occupations".*

"Clerical and Kindred Occupations." Office clerks, telegraph messengers, tax collectors and typists belong to this category.

3. *"Service Occupations."*

"Domestic-service Occupations." Persons engaged in household work and cooking belong to this category.

1. C. L. Shartle—Occupational Information : Its Development and Application. New York. Prentice-Hall, 1952, pp. 115.

"Personal-service Occupations." Washermen, waiters and barbers belong to this category.

"Protective-service Occupations." Ordinary soldiers, policemen, detectives and sailors belong to this category.

"Building-service workers and porters." Building cleaners and porters belong to this category.

4. "Agricultural, Fishery, Forestry and Kindred Occupations."

"Agricultural, horticultural and Kindred Occupations." Persons engaged in farming, harvesting, raising livestock, looking after poultry and caring plants etc. belong to this category.

"Fishery Occupations".

"Forestry (except logging) and hunting and trapping occupations."

5. "Skilled Occupations." Persons engaged in specialised type of craft and manual work belong to this category.

6. "Semi-skilled Occupations."

7. "Unskilled Occupations."

This grouping or classification of occupations is very helpful to the school counsellor. He can present the particulars about a single occupational family to a particular student if he thinks that type of occupation will be the most suitable for the student. Choice of occupational family will depend upon the innate abilities, skills, interests, aptitudes and necessities of the individual student. This will surely save both time and energy of the pupil.

What Type of Job will be Selected by a Student

Before selecting an occupation a student will like to consider many points and select a vocation which will satisfy following points.

1. The job that offers satisfactory pay and is not detrimental to self respect.

2. Chances of promotion to higher posts.

3. Opportunities for further training.

4. Fairness of the general working condition and provision for holidays.

5. Whether the environment is suited to personal tastes and preferences of the employee.

6. Whether other people working there are similar to him in tastes, preferences and interests.

7. If there is good human relationships with the employer and other supervising officers.
8. The existence of good human relationship with other workers to be supervised by him.
9. Existence of the feeling of security of service, provision for gratuity, Provident Fund, Pension, Medical Allowances and Quarters will attract students.
10. If it is possible to get a sense of belonging.

EXERCISES

1. You wish to organise an occupational information centre in your school. From what sources will you obtain information? Discuss critically the different techniques of disseminating occupational information. B.T. 1965. C.U.
 2. What are the different ways in which the pupils of Secondary Schools may be provided with information in regard to courses and careers? B.T. 1967. C.U.
 3. How occupational information should be properly disseminated? Mention main features of a career pamphlet. C.M.C 1966. W.B.
 4. What do you mean by "occupational information"? Why is it necessary to disseminate this kind of information to school pupils at various levels of schooling? C.M.C. 1967. W.B.
 5. What is meant by Occupational Information? How would you disseminate it to your pupils and their parents? C.M.C. 1968. W.B.
 6. How can school children get occupational information? C.M.C 1969. W.B.
 7. Describe the different methods which may be undertaken for disseminating information about courses and careers among students and their parents. B.T. 1969. C.U.
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CHAPTER IX

PLACEMENT

Meaning of Placement Service—Who will carry on Placement Service—Why should there be Placement Service—Essential Elements of Placement Service—Co-operation between the School and Other Agencies—Job Analysis—Attributes Necessary for Different Jobs—How to apply for a Job—How to hold a job.

Meaning of Placement Service

Placement service is an essential part of the Guidance Programme. The Guidance programme will be incomplete without placement service. It is nonsense to think that a guidance officer will collect all information about the pupil, give the pupil all information regarding the educational institutions and practical training courses, give him occupational information and then stop without helping him to select and enter into a job. If the Guidance Officer stops here before doing the last thing he will not be doing his duty to the end. Helping a pupil to secure a job appropriate to his abilities and proper adjustment to it is virtually the purpose of Vocational Guidance. Placement and follow-up are the two major items of the guidance programme.

Placement refers to the assistance given to a pupil to get a suitable employment. It is a complicated affair. Any assistance given to pupils by placing them into a particular course of study, training or job may be regarded as placement service. Placement service intends to help students, who are going to leave schools or colleges, in making an occupational choice, in securing a job whether full-time or part-time, to prepare for it and to remain engaged in it.

Local Employment Exchange Offices maintain Placement Service Departments and Placement Officers. School authorities can work through them or can establish their own Placement Service Unit. The School Placement Service Unit may be looked after by the school counsellor or any other officer designated as the Placement Officer. After interviewing a pupil the counsellor will supply all information about him to the Employment Exchange. He will make arrangement for interview of the pupil by the Placement Officer. The pupil

will have to be taught how to write an application and how to face an interview board. With the help of the Placement Officer or the Employment Exchange the pupil will be interviewed by the prospective employer. The prospective employer will get all information about the pupil from the Placement Officer. If the employer, who previously made all his requirements available to the Placement Officer or to the Employment Exchange, finds the pupil suitable for his work he will appoint the pupil. The pupil may require some in-service training just after taking up the job. The employer may be requested to give him in-service training. It will have to be noticed for a considerable period of time whether the pupil is capable of performing his duties successfully. All these steps are included in the placement service.

Who will Carry on Placement Service

There is difference of opinion regarding the authority which will remain incharge of the placement programme. In India unemployment has become a colossal problem and a terrific hurdle to the pupils who are about to complete their studies and leave their educational institutions. It is very difficult to fix them to some suitable occupation. Still attempts should be made to help them in getting jobs.

There are some people who hold the view that placement service should be done by the school. According to them placement of students to some vocations is the last part of the student's educational process. If the school does not perform this duty it will be ignoring its final obligation. They think that placement service means transferring students from school to occupations and is a part of educational service. The transfer of a student from school to occupation is regarded as a step in the educational process just like the transfer from school to college. A big school or a big college should maintain a placement office and a Placement Officer. The Placement Officer will collect information about different types of employment, number of vacancies, their requirements, emoluments offered, scope for future promotions and method of getting jobs. He will try to know what type of employees are

wanted by the employers. He will have to determine, with the help of other teachers, how to prepare their pupils for those jobs.

A pupil remains in the school for several years and mixes with teachers and fellow students intimately. The school is in a better position to gather more reliable and thorough information about a pupil from his school examination marks, teacher's ratings, Cumulative Record Cards and the Counsellor's records. A Placement Officer should have a clear idea of the assets and liabilities of the student before sending him to a prospective employer. He should send a candidate to the employer after ascertaining the latter's requirements. A counsellor may use different psychological tests in order to collect information concerning the intelligence, aptitude, interest and other propensities of the pupil. The counsellor will communicate such information to the Placement Officer. Pupils generally seek the help of the school counsellor or the Placement Officer when they leave their schools and try to enter into a vocation. A school doing the placement work will be liked by parents and students.

Our Government has established Employment Exchanges in several big cities for helping unemployed and underemployed youths to get suitable jobs. But most of our pupils live in rural areas and they are unable to reap the benefit of such Employment Exchanges. So in order to help these unfortunate pupils there should be provision for placement service in schools and mufasil colleges. As Employment Exchanges render services to large number of people it may take long time in helping an individual pupil. If it is done by the school the pupil will have to spend much less time.

Another group of people are of the opinion that placement is not the responsibility of the school. In countries where public or State Employment Exchanges have been established the school will simply act as a clearing house for information. The school authorities will communicate all information about its pupils to the local employment agency. They put following arguments in support of their views.

The work load of the school counsellor is already heavy. It will not be possible on his part to do this additional work.

Where there are Government Employment Exchanges there will be duplication of work if placement work is done by the school also. Government Employment Exchanges are named in some countries as Community Employment Agencies. Employment Exchanges are better equipped for doing placement work more efficiently. Employment Exchanges secure jobs for young as well as for old persons. They can have branches for catering to the needs of mentally retarded and physically handicapped persons also. They are adequately financed by the state. But school authorities can hardly afford to incur such huge expenditure.

It may not be possible on the part of the school to help those candidates who want re-employment or change of employment. School authorities cannot keep contact with all types of employers and cannot gather information about all employment opportunities. The local Employment Exchange can work in co-operation with other distant Employment Exchanges. It is not possible for the school authorities to keep contact with those employers who reside far away from the school.

Sufficient funds being available Employment Exchanges can employ a large number of efficient and experienced officers to render better services. They can publish costly bulletins, journals, monographs and guides to vocations for the dissemination of occupational information.

According to existing laws all employers employing more than 25 persons are bound to notify all their vacancies to the local Employment Exchange. So they can keep more occupational information.

On the otherhand activities of the Employment Exchange may be jeopardized by corruption, red-tapism and nepotism. Personal and other influences may often vitiate the activities of employment offices. Employment Exchanges very often look after adults and ignore the cases of young students. Many people have suggested that men from the Education Department, Judicial Service and Civil Services should be deputed to employment offices in order to avoid such influences. As most of the employment offices are situated in urban areas they can hardly help job seekers from rural areas.

Generally they do not get sufficient time to apply psychological tests such as tests for intelligence, interests, aptitudes, achievements and personality traits for determining the innate abilities of each candidate. They cannot prepare or train a candidate for a particular job.

From what has been said so long it is evident that the school is in a better position to know the student because the student remains in the school for ten to twelve years and the school counsellor maintains Cumulative Record Cards wherein are regularly entered all academic attainments and psychological test results. Employment Exchanges cannot probably gather such detailed information about a student. On the otherhand a school counsellor or the School Placement Officer cannot collect information about different types of available occupations. School authorities can educate and train candidates according to the requirements of the employers. School authorities cannot provide large amount of money for such services. In this connection some people say that the state should give adequate financial help to schools for this purpose. This money should come either from the Labour Department or from any Social Service Department instead of the Education Department.

The present author is of the opinion that in India the placement service should be done by the Employment Exchanges and the School authorities jointly. In a country like India where a large number of persons are unemployed or underemployed and where there are more candidates than the number of available jobs it is simply impossible for the school authorities to fight this problem single handed. The best arrangement will be if the Employment Exchanges and the school authorities chalk out joint programmes and try to implement the programmes jointly. Such co-ordinated efforts will surely bear some fruits indeed.

Why Should There Be Placement Service

It has already been said that placement service intends to help pupils by placing them into a particular course of study, activity training course or an occupation. Therefore a Placement Officer should thoroughly know his pupils and the courses of studies and occupations available in the country. Pupils and

the employers are directly involved in the process. Both of them are benefited by the placement service.

Each and every employer will want to take a hand who is interested in his work, is efficient and the fittest man to do the work. If the employee gets interest in the job and is capable of performing his duties efficiently the result will be more work, more production and more profit. If the employee is not interested in his occupation or is not an efficient worker he will soon turn to be a slow coach and there will be less production. But the employers want more production and larger profit.

It is not possible for the employer to know each and everything about the candidate when is just appointed. He will always request the Placement Officer to give him a good and able worker. In this way the employer may be benefited by the placement service.

Parents hope that their children will get good jobs after they have gone through with their studies. All parents cannot manage to secure jobs for their children through their personal efforts. If placement service is rendered to all students by the school, parents and the public in general will be very much satisfied.

The school tries to educate a pupil according to his age, ability and aptitude. It aims at proper development and social adjustment of the pupil. In addition to helping a pupil in selecting a course of study another moral obligation of the school is to assist a pupil to get a job and to prosper in it. We have already said that placement service is the final step of the guidance programme and may be regarded as the end product of education and for occupational adjustment of pupils there should be provision for placement service. By placement service pupils are immensely benefited. Some pupils leave schools before passing the School Final Examination. A large number of pupils do not go to colleges for higher education after passing the Higher Secondary or School Final Examination. They approach their teachers and counsellors for jobs. It is the pious duty of the school to help them in getting jobs. It is not possible on the part of a school to assist all of them in getting employment in our country now-a-days. Therefore the school will have to seek help from the Employment Exchange. School placement unit

may help pupils in getting jobs if the school is a small one. But if the school is a big one it becomes simply impossible to cope with this insurmountable problem.

Essential Elements Of Placement Service.

A Guidance Officer placed in charge of the placement programme should know that there are a few elements essential to the placement programme. They are as follows :—

A. All available information about the pupil is the first essential. We have all along been telling that we should know our pupil thoroughly before giving him any guidance. We cannot go even a single step if we do not know the family background, previous experience and other assets and liabilities of the pupil. In the Chapter on basic data we have already discussed what pupils' data are necessary for rendering guidance service. In the placement programme also we require the following information about the pupil.

(i) The name of the pupil, his father's name, address, date of birth, height, weight, general health condition, father's economic condition, his aspiration and several other personal information.

(ii) The pupil's academic achievements and training.

(iii) His previous experience. Whether the pupil was previously employed? If so what was the nature of his work and his salary? What were the reasons of his giving up the job.

(iv) Pupil's personal appearance and psychological test scores. A pass-port size photograph of the pupil.

(v) Whether he was referred to any employer beforehand and what was the result of his interview.

B. Occupational Information. The Placement Officer should collect information about all the available occupations. He should know the level of educational attainments, practical training and other requirements of the jobs which are available. So job analysis is necessary. After analysing job requirements he can determine which pupil will be best suited for a particular job. He should also know to whom the pupil will have to approach for a job.

The School Placement Officer will visit different employers and the local Employment Exchange and will request them to

supply him all employment notifications regularly. If he can gather information about vacancies existing in different offices and Government departments he will be able to appraise his pupils of those employment opportunities.

All prospective employers and the local Employment Exchange should be informed that the school has organised the Placement Service Unit. The School Placement Officer will have to work in co-ordination with the Employment Exchanges and other community employment agencies. He may seek help from Rotary Clubs, Lions Club, Y. M. C. A., Y. W. M. C. A and such other organisations who have Placement Service Units. He may approach the Chamber of Commerce and Labour Unions for some help.

A guidance library should be established in the school. Several trade and professional journals may be subscribed by the guidance library.

Pupils and parents should be encouraged to take the help of the school placement unit without any obligation. All other members of the staff of the school should be requested to co-operate with the School Placement Officer and to collect occupational information as far as possible.

C. Proper records will have to be maintained. The school counsellor or the placement officer will have to frame a Pupil's Inventory and maintain a Cumulative Record Card for each pupil. All particulars such as his name, age, address, physical condition, study habits, scholastic achievements, mental abilities, regularity in attendance, punctuality, family background, power of taking responsibility, social adjustment, personality traits and results of psychological tests should be entered into these records. He should be ready with all personal data of the pupil so that it may be immediately supplied to the prospective employers or to the local Employment Exchange if and when asked for. We have already described what is meant by a Cumulative Record Card and how it is to be maintained. At the same time there should be Occupation Survey Cards showing the names and particulars of available jobs. Students should be allowed to see these Occupation Survey Cards from time to time. Particulars about occupations can be collected from local

Employment Exchange or from the advertisements published in prominent newspapers.

From these records the Placement Officer will be able to supply his students information about the vacant jobs which are suitable to their abilities, interests, aptitudes and training.

D. Although the School Counsellor or the Placement Officer will remain in-charge of the placement service, all other members of the staff of the school should be consulted when making new plans and schemes. Specialist teachers will be able to assist students in this field.

The Headmaster of the school should provide the Placement Officer with proper office room, furniture and other contingencies. If necessary, employers may come to the school and interview intending job seekers in the Placement Officer's Office.

E. Cordial relationship should be maintained with the local Employment Exchange because without their sincere help the school placement programme will be a failure. They have a big organisation and adequate finance. They can collect information about different types of employment opportunities. On the otherhand the Employment Exchange or the Community Employment Agency should render all possible co-operation and help to the School Placement Officer or the counsellor in this matter.

Co-Operation Between the School and other Agencies

The following are some of the fields where a school can actively co-operate with other employment agencies.

(1) *Psychological Testing.*

Different types of Psychological tests can be administered both by the school and by the staff of the local Employment Exchange. When tests are applied by the Employment Exchange they can supply those test scores to the school counsellor. Similarly the counsellor can supply information recorded in the student's Cumulative Record Card to them. In this way they can exchange information about the student. But one thing should be remembered that there should be no duplication of work. If the school testing service is very efficient the Employment Exchange need not waste time by applying tests. They can collect test scores from the school.

(2) *Job Information.*

It goes without saying that there should be constant interchange of information amongst different agencies. Whatever important information is collected by one organisation should be made easily available to the other. In the placement programme one should supplement the other. Otherwise there will be waste of time, energy and money. The Employment Exchange is in a better position to collect and disseminate occupational information in a more scientific way. So the school needs their help in this matter.

(3) *Counselling.*

School authorities may invite experts from the Employment Exchange, from time to time, to deliver talks to students on the following topics.

- (a) Names of Jobs available in the country.
- (b) Names and locations of the places where those jobs are available.
- (c) Nature of work to be done in different jobs.
- (d) Meanings and implications of temporary and permanent jobs.
- (e) Scales of pay and other allowances offered in different jobs.
- (f) Essential educational qualifications and practical training needed in different jobs.
- (g) Scope of future prospect.
- (h) Amenities which are generally provided to employees.
- (i) Stability and financial condition of the employing concerns.

4. *Placement.*

The School Placement Officer or the Counsellor cannot collect information about all vacancies from individual employers. Again it is not possible on the part of the potential employers to send copies of advertisements or their vacancy notifications to all schools. They find it feasible to send their vacancy notifications only to the Employment Exchange. In such a situation the Employment Exchange will have to work as a clearinghouse of information. It will send copies of those

notifications to local schools. When this is done the school counsellor will select suitable students and send all necessary information about them to the Employment Exchange. The Employment Exchange will now communicate the names of intending candidates to the prospective employer. After that those students may be interviewed by the employer. If desired the employer may come to the Employment Exchange or to the school in order to interview those students. This will surely save much time and energy. When a student enters into a job the employer may be requested to send a report about his activities to the school counsellor from time to time. On the otherhand the student may be asked to inform the school counsellor how he is passing his days there. Is he satisfied with his Job? This system will enable the counsellor to carry on his follow-up work.

Job Analysis

The Counsellor should know how to make analysis of a job. Job analysis means the determination of the specific activities which are to be carried out in a job, the circumstances under which those activities are to be done and the attributes needed for success in the job. Students should be taught how to evaluate a job, how to apply for a job and how to maintain the job. The nature of work which is to be performed by the employee should be very clear to him.

In selecting a candidate the counsellor should have a clear idea about the job and its requirements. In preparing tests for selection of candidates the job should be analysed before selection of test items. Indices of success in a job is necessary while preparing such a test.

Job analysis is necessary for various reasons. A job should be analysed in order to ascertain the extent of educational achievement, skill and training necessary for success in it. It is necessary to know the pay scale also. A counsellor will want to know how complex is the duty to be performed and what type of educational training will have to be imparted. Job analysis will enlighten the trainer about the nature of the training needed. A student will want to know what the possibilities of future promotions are. All information will have

to be collected by the Placement Officer or the Counsellor very carefully.

There are some psychologists who think that job analysis refers only to the qualities which are essential to success in the job. But job analysis should provide two things, viz ; the job description and the qualities which are necessary for being successful in the job.

Job Description

Job description generally means what a worker will actually do and under what conditions he will have to do his work. There should be both detailed and specific descriptions of all the activities which a worker must perform and what instruments he will have to handle in the job. Take the case of a technical worker of the Meteorological Office. Job description will reveal that a technician of such an office will have to handle different types of instruments, charts, posters, graphs, geographical maps, thermometers, barometers, rain-gauge, an anemometer, weather cock, weather-gauge and seismograph. An worker will have to draw different graphs and issue weather bulletins from time to time. Very often the work will have to be done with great speed and precision. Reaction time of the worker should be small. Critical requirements of the job may be ascertained by a job analyst through actual visit to their laboratory and from statements of workers.

Job description will reveal the conditions under which a worker will have to do his work, whether the place of work is neat and clean or dirty and filthy. Whether there is any danger in the work, whether high speed and deep concentration of the mind is essential. It will also speak about the physical, psychological and social conditions of the environment in which a worker is to perform his job. Job description will also show what instruments, machines and other equipment are to be used.

Brown₁ suggested that a job-seeker will naturally want to know the following facts about the job.

1. Herbert L. Brown Jr. "Should You Take that Job". *Changing Time*, November, 1953.

1. "*The Opening.*" The student will want to know why the job has fallen vacant. This enquiry will supply him many information about the job.
2. "*The job.*" Job description should be made known to the student so that he finds out whether he will be interested in the job.
3. "*The requirements.*" Educational achievement, previous experience, skill and practical training required for success in the job should be ascertained beforehand.
4. "*The Company.*" Reputation, financial condition, rules and regulations of the employing concern should be enquired o..
5. "*The Place.*" Physical and social condition of the environment of the working place should be examined. Whether the worker will be able to attend his duties from his home or he will have to move to the place of work.
6. "*The People.*" A student should know what type of people he will have to mix and work with and what sort of a man his employer or his superior officer is.
7. "*The Pay.*" What is the basic salary? Is there any provision for D.A., Houserent Allowance and Medical Allowances? Is there any provision for pension, provident fund and bonus.
8. "*The Future.*" What are the future prospects?
9. "*The off hours.*" How many hours he will have to work everyday? Is there any shift duty? Is there any provision for off days? What are the leave rules of the company? What provisions for recreational activities have been made by the Company? The student should have answers to all questions as above before he takes up a job.

Qualities Or Attributes Necessary For Different Jobs

Qualities of the Worker :

Job analysis will reveal that different attributes are necessary for success in different jobs. A job analyst is to ascertain what attributes or qualities of the worker are necessary for success in a particular job. A list of attributes may be drawn up from the detailed description of the job. On the

basis of this knowledge tests for selection of personnel is to be constructed. Different attributes should be grouped into a few "set of categories". Efficient grouping of attributes will depend upon the ability of the job analyst. He should take into account all possible attributes necessary for success in different jobs. The list of attributes should be comprehensive. He should prepare the "set of categories" or lists systematically. Overlapping should be avoided as far as possible. The list of attributes prepared by him should be psychologically meaningful. Classifications of attributes should be made in such a way that it becomes possible to prepare psychological tests for their measurement.

Attributes or qualities necessary for success in a job may be as follows :—

1. *Physical condition of the worker.* This will naturally include his strength, height, weight, patience, speed, muscular co-ordination and so on. As for example, if a man wants to work in a factory he will have to possess proper height and sufficient strength. A research worker should possess attributes like patience and adaptability.

2. *Sensory Organs.* Sharpness or acuity of senses are necessary for success in some jobs.

3. *Perceptual Powers of the candidate.* This item includes his speed of perception and accuracy of discrimination.

4. *Degree of intelligence possessed.* It will include abstract as well as concrete intelligence. Reasoning and power of problem solving may also be brought under this head.

5. *Academic achievement.* The requisite standard of education, and practical training necessary should be ascertained. The power of expression and general knowledge should also be considered.

6. *Interest pattern of the candidate.* This will include nature of likes and dislikes. Whether the candidate is interested in the welfare of other people.

7. *Aptitude of the Candidate.* It may include mechanical, artistic, clerical, musical or any other type of aptitude.

8. *Power of social adjustment.* This will include the candidate's power of adjusting himself to his social environment.

pleasing manners, tact of dealing with others in different situations.

9. *Emotional Condition.* Whether the candidate is emotionally stable? Whether he will be able to stand the pressure, speed, complexities and dangers of the job condition. It will also include his proneness to accident.

There may be many other qualities or attributes which are necessary for success in a job. The items to be enquired after should be determined according to the type of job for which a candidate is to be selected. The list given above is a tentative one and not final.

How to Apply For a Job

A student should be taught how to apply for a job. Many employers want applications in their prescribed "Application Forms" but others accept applications written in ordinary foolscap size paper. In any case an applicant will have to submit a written application to the employer or will have to present himself for personal interview. But in most cases they are to submit applications and present themselves for interview by the employer. While writing the application the applicant will have to supply following facts :

1. (a) Name.
(b) Father's name.
(c) Age.
(d) Address.
(e) Educational qualifications and practical training received.
(f) Previous experience.
(g) Present employment if any and present salary.
(h) Name of two referees whom the employer may contact for information about him.

2. He should present all facts in a systematic way. Everything should be written in a business like manner and with precision. There should not be any grammatical mistake in the application.

3. If the application is submitted in a prescribed form all the answers should be given to the point. If the application is

written in a foolscap size sheet of paper it should be white. Only one side of the paper will have to be used. It should either be written in ink or typewritten. There should be no afterwards correction. It should be written in such a manner that the employer is impressed and calls him for interview. No incorrect information should be given.

When appearing before the selection committee for personal interview he will have to note the following facts :

(a) He should be well dressed. His dress should be neat and clean and show good taste.

(b) His hair and nails should be dressed properly. His teeth should be clean.

(c) He should look cheerful.

(d) He should speak calmly and confidently.

(e) His behaviour should be attentive, enthusiastic and respectful.

(f) He should try to answer all questions correctly.

There are several other similar facts which can be mentioned besides those that have been mentioned here.

How to Hold a Job

We have so long told how to know about a vacant job, how to know the requirements of a job, what are the requisite qualifications for a job, how to apply for a job and how to get it. There is another matter which a student should also know. This is how to maintain the job. Students and workers think that if anybody can any how get into a job nobody will be able to dismiss him. But things should not be taken in such a light way.

There are some techniques of holding a job. Some of them are listed below.

(a) Always try to be punctual and do not leave the office before time.

(b) Be a willing worker and try to work to the satisfaction of the employer.

(c) Undertake your responsibility and do not hope that others will do your work for you.

(d) Do not quarrel with anybody and try to be friendly with all other fellow workers.

(e) Try to please your superior officer or the employer by your performance and behaviour.

(f) Look at the interest of your employer and be attentive to your boss.

(g) Obey your boss and appreciate his difficulties. Do not put any unreasonable demand to him.

(h) Behave properly with the customers of the company. Try to maintain the goodwill of the company.

EXERCISES

1. What is Job analysis? Classify the jobs into broad categories.
2. What is the significance of Employment Exchanges in a guidance programme? How can a visit to an Employment Exchange be made educationally useful to Higher Secondary School students? C.M.C, 1969 W.B.
3. Write short notes on :—
 - (a) Job analysis. C.M.C. 1969 W.B,
 - (b) Utility of a visit to an Employment Exchange. C.M.C. 1968. W.B.
 - (c) Classification of Occupation. C.M.C. 1968. W.B.

CHAPTER X

TECHNIQUES OF GUIDANCE AND COUNSELLING

Meaning of Counselling—Techniques of counselling—Use of Tests in Counselling—Types of counselling—Methods of counselling—Directive Method, Non-Directive Method and Elective Method of counselling—Limitations of Different Methods of counselling—Directive Method—Vs—Non-Directive Method of counselling—Individual counselling—Group Method of counselling—The Techniques of Group Counselling Method—Individual Method—Vs—Group Method—Counselling Interview—Counselling is not good teaching—Counselling and Therapy—Group Guidance.

In some of the good schools the Headmasters and class teachers are occasionally approached by individual students and parents for suggestions about the student's future courses of studies and vocations. Teachers try to help their students in choosing their future courses of studies and suitable vocations. Such suggestions are generally given to those students who approach them.

But at present, for various reasons, most of our Secondary schools and colleges are feeling the necessity of introducing more scientific system of Educational and Vocational counselling in their institutions. In the U.S.A. they are introducing more scientific and systematic Educational and vocational counselling in their educational institutions. In India we are yet to do this work.

Educational and Vocational counselling is a creative process and a novel situation wherein one man gives some assistance to another man. The first man known as the counsellor tries to assist the second man who is the counsellee. Counselling refers to the counsellor-pupil relationship. The counsellor collects all necessary information about the innate and acquired abilities, such as, the intelligence, aptitude, likes and dislikes, inclinations and other propensities of the pupil. Then he gathers all information regarding the different types of courses of studies and avenues of occupations available in the country. When the counsellor has done all these things he will discuss with the pupil and try to assist the pupil in solving his problems concerning the selection of a course of study or a suitable vocation.

Bordin₁ defines counselling "as an interview relationship between two persons in which one person accepts the responsibility for defining the nature of the relationship and its process with expectation that it will lead to increased happiness for other persons."

Wiley and Andrew₂ say that "Counselling is a mutual learning process involving two individuals in an educational environment, one who is seeking help from a professionally trained person, and the other, who by reason of his breadth of training and background, utilizes many adjustment techniques and methods in assisting the individual to orient and direct himself towards a goal leading to the maximum growth and development in a social and democratic society."

Wrenn₃ said that "Counselling is a personal and dynamic relationship between two individuals—an older, more experienced and wiser (counsellor) and a younger, less experienced and less wise (counsee). The latter has a problem for which he seeks the help of the former. The two work together so that the problem may be more clearly defined and the counsee may be helped to a self-determined solution."

The counsellor is to help the counsee to understand and accept his own potentialities for living, to get an idea of his own developmental progress and to work with the counsee in planning his future.

There are a few basic elements of the counselling process which a good counsellor should always remember. The individuality of each counsee should be respected. Roeber₄ says that there are four fundamental conditions which are common to all "Counselling approaches." They are as follows :—

1. "*Motivational factor.*" The pupil should be duly motivated or be in readiness to be counselled by a counsellor irres-

1. Bordin E. S. — *Counselling Points of View, Non-Directive and Others.* University of Minnesota Press. 1949.

2. Wiley R. D. and Andrew D. C. — *Modern Methods and Techniques in Guidance.* Harper & Brothers, New York, 1955.

3. G. C. Wrenn. — *The Counsellor in a changing world.* American Personnel and Guidance Association, Washington, D. C. 1962.

4. Roeber E. C. — "Counselling—which approach", *Theory into Practice*, February, 1963. pp.8—9.

pective of the fact whether he himself comes to the counsellor or is referred to the counsellor by somebody else.

2. "*The student—Counsellor relationship*". The relationship between the counsellor and the counsellee should be very cordial. The counsellor should establish rapport at the very beginning. The counsellee should understand that he has been cordially accepted and is respected as an worthy individual.

3. "*The Counsellor's decision making responsibilities*". The Counsellor should assist and encourage the counsellee to explore the merits and demerits of the different courses of studies and occupations. The counsellee is to be assisted in making his decisions. The counsellor should know how far he should proceed in the counselling process and to permit the child to make an independent decision.

4. "*The counsellor's respect for the privacy of Communication.*" The Counsellor should "respect a student's right to privacy" except in cases where there are chances of any physical harm and financial loss.

The counsellor will have to make all arrangements for the counselling interviews. He should be capable of influencing all students. Students should form an idea that counselling aims at assisting all types of students through self-understanding.

If there be any wrong doing or any violation of mores the counsellor need not minimize, overlook or excuse the pupil but will try to redirect him by appealing to his moral sense, honesty and other potentials. Both the counsellor and counsellee should try to explore the possibilities of future actions according to the pupil's potentials. A pupil of more potentials has greater possibilities for action.

Analysis of the pupil's choices is to be done very cautiously by the counsellor. He should be capable of understanding the implications of the Educational and Vocational Choices of pupils. He should explain to the counsellee the implications of such choices and its future prospects. It is necessary on the part of the counsellee to understand all the implications of his choice before making the final choice. All the possible hindrances, obstacles or barriers which may influence the

implementation of the Educational or Vocational choices should be clearly understood by the counsellee. The Counsellor should take into consideration all the influences of the changing political and cultural forces which may change the scope and opportunities that are in existence at the present moment.

Techniques of Counselling

Williamson¹ says that in the school setting "the counsellor is himself a technique." The total outcome of the counselling process depends upon the counsellor-pupil's relationship. In the school the counsellor should be a model before his pupils. A counsellor should remember the following eleven steps as his techniques for counselling for his own convenience.

Self-appraisal or self-understanding.

The counsellor will have to assist the counsellee to appraise himself more realistically. Through the process of give-and-take followed at the time of counselling interview the counsellor comes to know how far the counsellee understands his own assets and liabilities. Efficient questioning has been found to be an important tool by many counsellors. Broedel² has suggested that for self-appraisal a counsellor may prepare some questions which will "make it easier for the client to maintain a constructive focus on an area of importance to him", "to see relationships of important new areas to topics he had already explored", to induce the pupil to reject a wrong idea, to get some specific information wanted by the pupil regarding some topic, to perceive "his immediate feelings and concerns" and "to assist the client in assuming responsibility for himself."

Other important tools in the process of self-appraisal are the test scores. Counsellors administer different types of Psychological Tests for determining the innate and acquired abilities and capacities of each counsellee. Test findings give the pupil a comprehensive idea about his own assets and liabilities.

1. Williamson E.G.—The Counsellor as a Technique, Personal and Guidance Journal, October, 1962, pp. 108-111.

2. Broedel J.W.—"The Use of Questioning in Counselling", The School Counsellor, 1962, p 15.

Supply of Necessary Information

During the counselling interview the counsellor should supply all possible information which may be required by the counsellee. Robinson¹ suggests that a counsellor should supply all information which are accurate, pertinent, usable and essential. The counsellor should supply information in such a way that he does not overwhelm the pupil. Robinson says that the "counsellor should learn to state precisely what relation a particular factor has to the total situation being discussed." The purpose of the counsellor is "to widen horizons, deepen insights and suggest possible uses for maximum development."

Encouragement

Encouragement given by the counsellor to the counsellee is another important technique which will enable the counsellee to give a desirable shape to his own ideas. Encouragement increases the mental strength of the counsellee. Encouragement serves as an energising factor when the counsellee tries to make his Educational and Vocational choices on the basis of his self-appraisal and information gathered from different sources. The counsellee will ask many questions and the counsellor will try to encourage the pupil through his answers.

Correct Planning

Every work should be done in a planned way otherwise there may be some disaster and chaos. Plans should be prepared before undertaking a work. Even human beings develop according to a predetermined pattern. A counsellee is to formulate his short-term and long-term plans. It goes without saying that the planning for the future activity of a counsellee should be based on his self-appraisal, information gathered from experts and encouragement given by the counsellor. Future plans should be a bit flexible instead of being rigid. What course of study a child will follow will depend upon the nature of the job he would choose. If a pupil wants to become a doctor, he will have to join the Science stream. Perhaps a curriculum consisting of Chemistry and Biology will enable him

1. Robinson F.P.—Principles and Procedures in Student Counselling. New York. Harper & Brothers, 1950. p. 186.

to enter into a Medical College. The counsellor will assist the pupil to make his future plans.

Researching

The counsellee should not act as a passive listener but should actively participate in the counselling process. He should not be regarded by the counsellor as a "subject of experimentation" or a "a taste" or as a "case to be studied". So the counsellee should be actively involved in the counselling process. Self involvement will create due motivation. If he is successful in a job still there may be some scope for further improvement. But if he fails to do a job, he will have to search and research the causes of his failure. He should be made aware of his own attitude, capacity, competence, worth and he should be encouraged to try again with full vigour. Through the process of counselling interview the counsellee will gain more courage and self-confidence. Self-researching is essential for making a final choice of curriculum or a vocation. At some stage the pupil may be puzzled and may not be able to ascertain definitely what to do next. In some cases of failures it may be said that the pupil could not make himself settled down in the subject matter. In such cases also researching is necessary.

Analysing

The most essential point in the counselling process is analysing or "exploration of meaning". As the pupil should be aware of his own abilities and capacities he should at the same time be capable of analysing his own assets and liabilities. The counsellor may have to prepare a special pro-forma for self-report of the counsellee. The counsellor may use other techniques, such as, observation, inference-making and psychological tests for this purpose. Combs and Snygg¹ opined that "the accuracy of a description of one's self" is the crux of the counselling process. The counsellor should give proper attention to the likes and dislikes of the pupil and help him in making his choice.

(1) Combs A. W. and Snygg D. Individual Behaviour. Revised edition. New York. Harper and Row, 1959, pp.439-464.

Interpretation

The counsellor observes the pupil for a considerable period of time and apply some psychological tests to determine the pupil's abilities and capacities. So there are two kinds of data — one is the test data and the other is the non-test data. The pupil is helped to analyse or explore the meanings of those data. Now he will have to be helped to expound the significance of those data. Goldman¹ said that interpretation of obtained data will make clear to the pupil how he is now, what type of education and profession will be suitable for his future life and what he should do to achieve his goal. The counsellor will have to help the pupil to interpret those data and to understand them. The pupil will himself interpret those data and the counsellor need not try to impose any particular interpretation upon the pupil. If some tests are applied to determine the special interests of the pupil the counsellor may suggest the names of some persons who attained prosperity in life and had similar likes and dislikes.

Clarifying

It is really difficult to distinguish the clarifying process from the interpreting process. Clarification may be regarded as a part of interpretation. Clarification means the act of making a material or a concept more clear. At any step the counsellee may request the counsellor to clarify a particular point. In such cases the counsellor should try to keep the request of the counsellee as far as it is found necessary. Interest of the counsellee may be high in some areas which has been overlooked by him. The counsellor may draw the attention of the counsellee to such points.

Approving

There are some psychologists who hold the view that the counsellee should do everything himself and the counsellor should not give his approval to all plans, ideas and actions of the counsellee. But there is another group of people who are of the opinion that the counsellor should give his approval when he thinks it is necessary. According to them when a pupil wants

(1) Leo Goldman. *Using Tests in Counselling*. New York, Appleton—Century—Crafts, 1961, pp.143—160.

to change his course of activities on account of some unavoidable circumstances he should be allowed to think over the matter again. The aim of counselling process being the ultimate success of the pupil.

Evaluation

Another important item in the counselling process is occasional evaluation of the pupil's progress and correctness of the selection of educational stream and vocation. Some sort of evaluative procedure should be applied to check any discrepancies between potentials and performances of the pupil two or three times every year throughout his career. The counsellor will have to help him to scrutinize whether he is progressing according to his inner urges and social needs. At the same time the counsellor should try to evaluate the net results of his own work. He should be conscious enough to see that the counsellee is happy with the counselling interview. A form called "Student Evaluation Form", which is to be filled up by the pupil, may be prepared in order to determine the pupil's reaction to the counselling process. In case of necessity the counsellor may have to change the method followed by him in counselling interviews.

Reinforcing

Presence of good motivation and knowledge of gradual success are very important factors in the process of learning. Many experiments have shown that reinforced responses are remembered whereas non-re-inforced responses are gradually eliminated. Some psychologists use the words "reward and punishment" instead of using the word reinforcement. A counsellor is to assist his pupil to select a course which in future may turn into a rewarding one. One of the purposes of counselling is the reinforcement of the good and elimination of those which seem to be bad. When a pupil's choice is incommensurate with his intelligence, abilities and interests and is expected to bring success in life the counsellor should encourage the pupil to stick to his decision.

Use of Tests in Counselling.

There are some people who are of the opinion that Psychological tests should not be used by the counsellors at the very beginning. A counselling interview and careful discussion may

serve the purpose of the counsellee. It is not unlikely that a counsellee or his guardian may ask the counsellor to administer some psychological tests in order to determine assets and liabilities of the counsellee.

If psychological tests are used at all the counsellor will help the counsellee to interpret the test scores. The decision made by the counsellee will be more effective than the decision made by the counsellor. At the beginning the counsellor should abstain from giving any personal opinion. Instead of making any direct comment the counsellor may say that previous pupils having similar test scores succeeded in the profession chosen by the present pupil. If he likes he may say that the particular student stands at the 75th percentile or so. Again he may prepare a scatter diagram with test scores and grade averages of a large number of students. This graph will show the relationships between test scores and degrees of success of previous students. By looking at this graph the pupil will come to know what was the fate of a previous student who secured test scores like him.

Personality test scores will enable a pupil to get an idea about his own feelings and emotional conditions. In the counselling process the pupil's reactions to the test score are very important because emotional reactions may block "rational thinking." The counsellor should help the pupil to understand his own emotions.

It is not possible to use a "standard-battery" of tests in all cases on account of the existence of individual differences. Different test batteries are to be used in different cases. If there be any case where the pupil is suffering from "serious emotional disturbances" a clinician will decide which test and how many tests of what variety are to be used. Case study method may be of much help in such cases.

Types of Counselling.

There are different types of counselling, such as, educational counselling, vocational counselling and personality counselling.

1. Educational counselling is meant for assisting pupils to choose their courses of studies.
2. Vocational counselling is meant for assisting pupils in selecting their future careers.

3. Personality counselling is meant for assisting pupils in solving their personal and various other emotional problems.

Methods of Counselling.

1. Directive or Prescriptive or Counsellor-centred Counselling Method.
2. Non-Directive or Permissive or Client-centred Counselling Method.
3. Elective Method of Counselling.

Directive Method of Counselling.

In earlier days the counsellor was very often regarded as an expert whose duty was to tell a pupil what course of study or what occupation will be most suitable to the pupil. In this directive or prescriptive method of counselling the counsellor as an expert will gather all information, decide and tell the pupil what course he should follow.

Non-Directive Method of Counselling.

Our ideas are changing everyday. Many psychologists are of the opinion that the counsellor should help the pupil to realise his own individuality to the fullest extent, to formulate his own future plans. He should not ask the pupil to follow blindly the path recommended by another man. They prefer this Non-Directive or Client Centred method of counselling. In this method more emphasis is given to the pupil's own decisions. Rogers¹ advocated this client-centred method of counselling. Rogers opined that a counsellor's aim should be the natural growth of the pupil toward "maturity and adjustment." A child who can realise his own problems and can make proper judgment can be helped more than a child who entirely depends upon the counsellor. In this concept of counselling a pupil should get a fair knowledge of himself, that is, he should be conscious of his own assets, liabilities, interests, aspirations and responsibilities. An intelligent pupil will be able to use this knowledge to serve his own purpose as he matures. Barry and Wolf² said that

(1) Rogers C. R.—Counselling and Psychotherapy. Boston : Houghton Mifflin, 1942.

(2) Ruth Barry and Beverly Wolf.—Modern Issues in Guidance—Personal Work. New York. Bureau of Publications, Teachers' College. Columbia University, 1957. p. 50.

"Fundamentally, a developmental approach to guidance personnel work is predicted on the belief that all individuals are capable of progressively developing self-understanding, self-appraisal, and self-direction. The individual is seen from a psychological point of view that stresses his own inner processes."

Merits of Non-Directive Methods.

(a) Non-Directive method of counselling is the "Client-Centred" method. In this method a counsellor can observe a particular student more objectively. Here the student himself will select his course of study and vocation. The counsellor will simply help him to make his choice. This is possible in the non-directive method of counselling to a great extent.

(b) A particular student may suffer from some emotional disturbances and may be unable to adjust himself to his social environment. Proper application of non-directive method of counselling will be able to remove his emotional difficulties. When his emotional blocks are removed he will acquire an attitude of problem solving and will be able to make his own decisions.

(c) In the non-directive method of counselling a student is allowed to express his feelings freely. An efficient counsellor will accept all the feelings expressed by the student with a receptive attitude and will recognise and clarify all the negative and positive feelings of the student. When this is done an insight will develop within the student and he will be able to make his decisions more confidently and attain future success.

In this method a student can freely exercise his right to make his own choice of goals. This freedom to make his own decisions regarding future activities will give the pupil real happiness and increase his self-confidence.

(d) This method enables the counsellor to detect under-achieving students and their subject matter disabilities very easily.

(e) By applying this method vocational preferences of pupils may be understood without much difficulty and additional occupational information may be given to them.

Elective Method of Counselling.

Elective method of counselling is the mixture of the Directive method and the Non-Directive method of counselling. That is,

in the Elective method a counsellor does not follow singly the Directive method or the Non-Directive Method. In this method the counsellor adopts the middle way. In one case he may start with the Non-Directive method and then switch over to the Directive method. In another case he may start with the Directive method but after some time switch over to Non-Directive method. He will have to select his starting method according to his necessity. Some counsellors prefer this method.

Limitations of Different Methods of Counselling

Directive Method of Counselling.

(a) In this method the counsellor does many things for the counsellee. The counsellee depends too much upon the counsellor and loses his own initiative. He does not learn how to solve new adjustment problems and make decisions independently.

Non-Directive Method of counselling.

(a) It is a time consuming method. When there are large number of students it is not practicable to adopt this method.

(b) The passive attitude of the counsellor may annoy students and they may not consider him as an well wisher.

Elective Method of counselling.

(a) It is very difficult to follow this method. Some people are of the opinion that this method is rather vague and superficial.

(b) Unless the counsellor is a thoroughly trained and capable person this method may do anything other than real counselling. Instead of being a compromise this method may become an opportunism.

Directive Method Vs Non-Directive Method of Counselling

A non-directive counsellor will say that in the non-directive method the pupil will get an idea of the right path through insight. So far we have said that a counsellor should use non-directive method of counselling and the directive method of counselling has become obsolete now-a-days. But there are some counsellors who still prefer the directive method of counselling in certain cases.

Actually in some cases it is necessary to follow the directive method of counselling. In some countries according to existing laws a vocational plan of a pupil has got to be approved by a duly qualified counsellor.

Again when a case has been particularly referred to a counsellor by somebody or when an individual is unable to make his own decisions for some unavoidable reasons a counsellor has to use directive method of counselling.

When a counsellor comes to know from actual test scores that the selection of a course of study or a vocation by a particular pupil is wrong he will have to convince the pupil to change his plans. In such cases also the counsellor will have to adopt the directive method of counselling.

There are some psychologists who are of the opinion that the counsellor is an expert and keeps many information and can interpret the test scores better than a young counsellee. Williamson₁ said that "the effective counsellor is one who induces the student to want to utilize his assets in ways which will yield success and satisfaction."

Individual Counselling. ✓

Many schools of the U.S.A. have recognised the system of individual counselling sessions for fruitful educational planning. In some schools students are required to discuss with the counsellor at least for two times in a year. Individual counselling refers to these one-to-one sessions between the counsellor and the counsellee. In individual counselling the counsellor and the counsellee can take into consideration and examine all information collected so far about the counsellee, his assets and liabilities, his economic and social status and other necessary things. In the individual counselling process the counsellor can interpret the test scores and explain their implications and assist the counsellee to prepare his short-term and long-term plans.

In the counselling process there should be friendly relationship between the counsellor and the counsellee. It is possible to create such an ideal situation in the individual counselling system.

(1) Williamson E. G. "How to Counsel Students." New York: McGraw-Hill, 1939.

It is easier on the part of a counsellor to observe and interview a single individual at a time in this system. Interviewing has been described as a two-way process. If the counsellor interviews a single student at a time it will be easier for the student to understand the counsellor. In this system effectiveness of communication can be increased.

It has already been said that counselling refers to the relationship between two persons. A large number of psychologists are ready to accept individual counselling only and are unwilling to accept group counselling. According to them when more than two persons are included in the counselling process it is not proper counselling, because, there should not be more than two persons in a counselling situation. Wrenn₁ says that "First of all, counselling is personal. It cannot be performed with a group. "Group Counselling" is an anomaly; the two terms are not in harmony. "Personal counselling" is a tautology; Counselling is always personal."

Group Method of Counselling. ✓

Is Group Counselling possible? Willey and Andrew₂ and on the otherhand Hoyt and Moore₃ have said many things about the values and importance of group method of counselling. There are others who are of the opinion that group method of counselling is possible and useful. They put forward following points in favour of group method of counselling.

- I. Group method develops the individual's "Capacity for mutual interaction."
- II. In the group method an individual feels more secure and can express his own ideas more freely.
- III. It will save both time and money.
- IV. The group method presents a more "realistic and life-

1. C. G. Wrenn, "Counselling with Students", Guidance in Educational Institutions. Thirty-Seventh Yearbook. National Society for the Study of Education, Part I, Chap. IV, p.119. Bloomington III. Public School Publishing Company, 1938.

2. R. D. Willey and D. C. Andrew. Modern Methods and Techniques in Guidance. Harper & Brothers. New York, 1955.

3. K. B. Hoyt and C. D. Moore—Group Procedures in Guidance and Personnel Work. Review of Educational Research, April, 1960. pp.158-167.

like" situation to the individual and enables him to modify his habits, values, judgments and attitudes. Good examples of other participants will help a particular individual to modify his own views.

V. Some pupils may be very shy and unwilling to open their mouth before a counsellor. In the group method examples and activities of "More verbal members" may enable a shy member to win over his shyness and to express his own difficulties.

VI. In cases of indecision participants may receive some new ideas and suggestions from other participants.

VII. In a problem-solving situation an individual may get some clues for solving the problem from his frank discussions with others.

VIII. A participant will require less advice or direct guidance from the counsellor.

In the group method of counselling the counsellor will organise the group and will start discussions. He will at the very outset tell the group what their duty will be and how the group will proceed with their discussions in order to get maximum results. Each participant will be directed to understand and help others. Counselling date, time and place will have to be determined very cautiously. There may be two kinds of groups in this counselling method. One kind of counselling group may be named as "Closed Group" and another type of counselling group may be named as the "Continuous Group". The closed group finishes the job only with those pupils who participate from the beginning and no one is allowed to join the group in the midway. But in a continuous group anybody can join the group at any time. Both the counsellor and the counsellee have got some definite responsibilities. Each individual student is to help to "build a problem-solving relationship" —through group interaction. Each participant should allow others to express his ideas freely and listen to the ideas of others patiently.

The ultimate result of the whole counselling process will depend upon the counsellor's "skills and attitudes". He is at the pivot and will lead the whole group in the desired way. He

should be conscious of his own competence and should not hope to achieve something which is impossible.

Group counselling method should not be regarded as a substitute for the individual counselling method. Some students will prefer the group counselling method while others will prefer the individual method of counselling. The aim of group counselling is to help each individual student to get insight and gather experiences which will help him in his personality development and in problem-solving situations. But one should not think that group counselling is another name for psychotherapy. In group counselling there may be some personality change which comes as a by-product, but its purpose is not group therapy. According to Ohlsen and Proff, "group counselling is hygiological—working with normal youth in a non-medical setting".

On account of the gregarious instinct and continuous social control all human beings like to live together. Some psychologists are of the opinion that group method of counselling develops in an individual a desire to contribute something to the society and to receive something from the society. It is expected that in this method "social reactions and interactions" will enhance an individual's "growth and maturity". Respect and support of the whole group of students will develop a sense of self respect and a feeling of security.

The Techniques of Group Counselling Method.

In group counselling method the counsellor should take the following points or techniques into consideration.

- (1) Formation of groups with pupils who need counselling.
- (2) Establishment of counselling relationship with pupils.
- (3) Fixation of respective responsibilities of the counsellor and the counsellee.
- (4) Preservation of counselling relationship.
- (5) Preservation of Records. The counsellor should maintain records of all deliberations of counselling sessions in a duly

1. M. M. Ohlsen and F. C. Proff. The Extent to which Group Counselling Improves the Academic and personal Adjustment of the Under-achieving Gifted Adolescent. Co-Opt. Research Project. 623. University of Illinois. p. 18.

prepared "Group Counselling Record Form." Though it is difficult to prepare records for individuals yet the counsellor should try to do it.

Time, Place and Other Group Activities in the Group Counselling Method.

Time ("Activity period and Home room"). A definite time should be fixed for group counselling and guidance work. Some periods may be set aside for this work in the school time-table. A few teachers of the school should be engaged in group guidance. One or two school periods may suffice for the work. Some time may be utilized just before or after school hours.

Place (Class room or Study Hall). Group counselling may be held in a separate or vacant class room or the Study Hall. Though the Study Hall is meant for special study purposes still it can be used at convenient hours.

It is difficult to suggest a definite set pattern because different programmes may suit different schools at different times.

Individual Method vs Group Method.

Bilovsky, McMasters, Shorr and Singer¹ studied several cases of Vocational choices made by pupils, some of whom were counselled by group method and others by individual method. They found no significant difference between the results of two methods. They could not accept "the concept that the individualised face-to-face counsellor-client relationship is always more desirable for effecting good counselling than a depersonalized group method."

Froehlich (1958)² carried on research work for determining the relative effects of individual counselling and group counselling. He found that the group counselling method is more effective than the individual method of counselling.

1. D. Bilovsky—Individual and Group Counselling. *Personnel and Guidance Journal*, March, 1953. pp. 363—365.

2. Clifford P. Froehlich—"Must Counselling Be Individual?" *Educational and Psychological Measurement*. Winter 1958. pp. 681—689.

Hewer (1959)¹ also could not see any significant difference between the two methods in her studies.

Hoyt and Moore (1960)² and Marx (1959) studied the differences among the results of group counselling, individual counselling and no counselling. They selected a large group of underachieving college students and divided them into three groups. To the first group they applied the group method, to the second group they applied the individual method and the third group was used as the control group with no counselling. Their experimental results showed that those who were individually counselled showed significantly better results than the group counselled, or non-counselled groups.

Davis (1959)³ also did some work by dividing his subjects into individual counselling group, group counselling group and control group. He found that both the individual counselling and group counselling groups showed better results than the non-counselling group. He, however, found that the group counselled pupils showed significantly better results than the individually counselled pupils.

From a general survey of the abovementioned research findings it is very difficult to say which one of the two methods is the good method. But it is evident that in the counselling process a counsellor is to interview all pupils. It is better to interview a pupil individually. Still it seems better to adopt group guidance procedure at the initial stage in order to make the pupil conversant with all necessary information and then to follow the individual counselling method. The counsellor should be duly trained to interview an individual student properly.

1. V. H. Hewer—"Group Counselling, Individual counselling and a College Class in Vocations." *Personnel and Guidance Journal*, April, 1959, pp. 660-665.

2. Hoyt K. B. and Moore G. D. "Group Procedures in Guidance and Personnel work". *Review of Educational Research*. April 1960, pp. 158-167.

3. Donald A. Davis—"Effect of Group Guidance and Individual Counselling on Citizenship Behaviour." *Personnel and Guidance Journal*, October, 1959. pp. 142-145.

Counselling Interview

More than one interviews may be necessary in the counselling process. The same counsellor should be interviewed at different ages. He should be interviewed twice or thrice during his junior high school stage, once or twice when he will be choosing his curriculum in the Secondary School, once when he goes for college or higher education and once or twice when he finishes his educational career and intends to join some work. For choosing a vocation and for preparing for it he may have to see the counsellor on some later occasions also.

The counsellor should make previous arrangements for interviewing pupils. Time and date should be fixed by arrangement. As the counsellor will have to interview a large number of pupils a priority-order should be maintained. It will be convenient if the counsellor allots 30 minutes for interviewing each pupil. If the interview is finished within less than 30 minutes the counsellor may utilise his surplus time in preparing his records. If the interview is not finished within the stipulated time the counsellor may continue it on some other day.

The counselling interview should be conducted in a specially arranged setting in the school building so that the pupil gets a favourable impression of it. The Counsellor should have a private chamber where he can talk with pupils without any disturbance. He should be provided with a nicely furnished office where all necessary papers and records can be maintained. The counsellor should, through his behaviour, let the pupils know that he is there to assist them. The attitude of the counsellor towards the pupils is very important in the counselling interview. The Headmaster and other teachers should treat the counselling interview with sympathy. In a proper setting the pupil will respect the counsellor and develop confidence in a counselling interview.

The counsellor should prepare himself before every interview. He will have to go through all the records and all other pertinent information about the particular pupil whom he will be interviewing on some fixed date. The counsellor should be in such a position that the pupil will feel from his talks that he is

fully acquainted with the pupil and his problems. The counsellor will have to maintain a Cumulative Record Card for each pupil. The counsellor should not begin the counselling interview without collecting all pertinent information about the pupil from all possible sources. If all preparations are not made properly a pupil will face the counselling interview with an indifferent attitude and will have no faith in it.

Counselling is not good Teaching

Both the teacher and the counsellor aim at the total development of their students. As all teachers are to take part in the guidance programme one may think that teaching and counselling are synonymous but as a matter of fact they are not so. Ordinarily a teacher is concerned with intellectual and academic subjects whereas a counsellor is busy with the social and emotional adjustment situations. A teacher helps his students in mastering the contents of a particular subject while the counsellor helps his students to make proper choice of a course of study or a vocation.

A teacher is concerned with the method of teaching and the method of presentation of some subject matter and try to make these helpful to the students for learning most effectively and economically. His techniques are lectures, discussions, projects, excursions and frequent use of audio-visual materials. But a Counsellor is concerned with psychological make-up, innate or acquired assets and liabilities of students. He uses psychological tests, interview techniques, observation techniques, diagnostic tests, Cumulative Record Cards, Guidance Schedules and Occupational information charts as his tools.

A teacher teaches all students of a class at a time whereas a counsellor interviews one student at a time.

A teacher always tries to increase his knowledge of the course content. But a counsellor always tries to gather more and more information about different occupations, schools, colleges, training institutions, apprenticeship courses, occupational opportunities, psychological tests and clinical methods.

But it is true that both teaching and counselling are the two important elements in the educational process. Both of them

contribute to the total development of students. Both the teacher and the counsellor try to help students to develop properly in a democratic society.

Counselling and Therapy

Rogers¹ and many other scholars are of the opinion that counselling and psychotherapy denote almost the same process. There are many authors who hold the view that guidance, counselling, psychotherapy and clinical psychology refer to the same process and they differ in degrees rather in kind.

But there are other authors who hold the view that counselling and psychotherapy differ in their functions, nature of persons involved, situations where they are used, test materials and techniques used. Counselling is regarded by many as the process of rendering professional help to normal individuals or to persons having normal anxiety. It is true that students who face some problems or suffer from conflicts will come for help to a counsellor. He may deal with cases where problems are nonimbibed problems and conflicts are conscious conflicts. A counsellor is generally not concerned with persons suffering from dissociative trends and neurotic anxiety. So a counsellor will try to help a normal person.

A counsellor may meet some students whose conflicts are deep rooted and problems are of neurotic pattern. Unless he is duly trained to deal with such cases it will be better for him to refer such cases to psychotherapists.

Therefore it seems that there are some differences between psychotherapy and counselling.

Counselling is generally concerned with normal individuals of educational institutions. A psychotherapist generally deals with abnormal persons in a clinical or medical setting.

Both the counsellor and the therapist use interview techniques and case study method. But there are some differences in their approach. Again they use different types of tools. A counsellor gives emphasis to the number and breadth of the tools and techniques whereas psychotherapist gives emphasis to depth.

1. Rogers. C. R. *Counselling and Psychotherapy*. Houghton Mifflin Co, Boston, 1942.

A counsellor requires more active co-operation of parents and teachers than a psychotherapist.

A counsellor does not solely depend upon psychological tests but is also concerned with the socio-economic conditions of students.

Group Guidance

Before closing our discussions about group counselling we will be failing in our duties if we do not say something about group guidance. Group Guidance refers to guidance work undertaken in groups of 30 or 40 pupils by a counsellor at a time. Guidance classes, home-rooms and occupational classes are the best places where this work may be done. In the group guidance process the counsellor is to look after "interpersonal and intergroup relations, personal and social adjustment, educational and vocational planning, and orientation to school." Caldwell¹ says that "Group Guidance activities are directed, to a large degree, to creating an appropriate setting for subsequent counselling and other teacher relationships with individual students."

Group guidance may be undertaken by the following techniques with efficiency.

1. Guidance Classes

Guidance classes with a teacher as the leader may be held regularly. The group leader will lead the group discussions which aims at the preparation of "self-inventory, self-analysis, and self-planning for the future."

2. Home-rooms and Activity Classes

Discussions concerning common problems and their probable solutions may be held in home-rooms and activity classes. During the discussion time the counsellor may apply the principles of group dynamics and create a favourable climate for free and cordial discussion. Members of the group may discuss personal assets and liabilities, future educational planning, future career planning and such other relevant topics.

1. Edson Caldwell.—Group Techniques for the class room Teacher. Chicago : Science Research Association, 1960, p 10.

3. Study Tours, Excursions and Occupational Classes

Pupils may be taken to study tours occasionally. They may visit mills, factories, offices, and other industrial organisations for getting some idea about the working conditions of those organisations. In an occupational class pupils may discuss about the educational and other qualifications which are necessary for getting jobs in various industrial organisations and try to clarify several questions which may arise in the minds of the pupils. Many emotional and vocational problems of individual students may also be solved in occupational classes.

4. Orientation of Pupils

By the word orientation we understand a process by which a new pupil is made acquainted with the aims, objectives, rules, regulations, scopes, limitations and policies of the group guidance process. Students who have no or very little idea of the world of work should join orientation classes organised by the school counsellor or by some other agencies.

5. Co-Curricular Activities Organised in Schools

A counsellor may carry on group guidance work through co-curricular activities of students. Psychologists and educationists are of the opinion that the group co-curricular activities enable pupils "to learn initiative, resourcefulness, co-operative planning, and intergroup relationships."

Some Other Techniques of Group Guidance

There are other useful techniques which a counsellor may adopt in the process of group guidance. Some of them are mentioned below.

Group Discussion

The most commonly used technique of group guidance is group discussion. It has been found to be a very useful and reliable technique by many counsellors. Group discussion may be held with large groups also. In the group discussion method all members of the group are actively involved in the thinking process. This method helps an individual to understand another's mind and makes him courageous enough to express his own ideas. His attitudes and ideas about social rules, morals,

ethics and religion are modified and formulated on hearing the discussions held in the group. A student may be very anxious owing to overthinking about some particular problem and may have an idea that he is the only person in this world who is facing that problem. Through group discussions he may come to learn that such a problem is not unique to him only but common to all other students of his age.

After finishing group discussions participants may go to a counsellor for more effective individual counselling. When he will be before the counsellor he will be able to proceed with the process of individual counselling feeling less difficulty. It is easier to establish necessary rapport with an individual who participated in group discussions beforehand.

The size of the discussion group may be decided by the counsellor according to necessity. Such a group may include 30 to 40 individuals according to necessity.

The nature of discussion should be as far as possible flexible. Members of the group may be selected from different classes. A topic or problem is to be selected for discussion beforehand. One gentleman suggested that an unfinished or incomplete sentence, such as, "The subject I like best is....." may be taken up for discussion. One group of pupils will say in favour of the item and another group will speak against the item. Then all members of the group will discuss the whole question for coming to a common decision and forming some attitudes and ideas about the subject at issue. Different sessions can be held for discussing different problems.

Buzz Sessions

Buzz Session is another method of group discussion but with small number of pupils for ensuring more interaction among participants. In Buzz Session an individual pupil will get more chance for active and individual participation than in a large group discussion session. For more detailed discussions a large group may be divided into several small groups in Buzz Sessions. A large group of 40 pupils may be divided into 8 small groups of 5 pupils each. In a large group a pupil may not feel courageous enough to participate in the discussion actively and

freely or he may not get any time to speak. But in a small group he may get the freedom and chance for expressing his ideas.

Each of these smaller groups will undertake the responsibility of dealing with one area of the problem under discussion. This small group will formulate some questions concerning that particular area. For convenience and smooth working of the small groups the leader of the large group will select a leader for each small group. There will be one recorder in each small group to record questions and other matters for which that particular small group is made responsible. After some time the original large group is reformed. Discussions of small groups are summarised at last in the large group.

Buzz Session as a method has been found to be a very good method, because, by this method a large number of items or questions can be discussed simultaneously. In Buzz Session each and every member gets a chance to make his own contribution, which may not be possible in a large group and it speeds up discussion as different small groups examine different questions at the same time.

As regards the limitations of Buzz Session one may say that the whole problem is not discussed in each small group and they cannot fully solve the entire problem.

Panels And Debates

The counsellor can most conveniently use panel and debate techniques at the early stage of a large-group guidance process. At the early stage arrangement may be made to hold panels and debating sessions for discussing and attacking the problems from different angles of views. All pupils can freely participate and take some responsibility in panels and debates.

The subject matter on which there will be discussions in panels and debates may be chosen by the pupils themselves. The counsellor may also focus their attention to some problem concerning their choice of educational stream or choice of vocations.

Panels and debating groups may be constituted both formally and informally. Generally a panel is constituted of three to six individuals. All members of the panel will tell something about the problem and present their personal views. No specific

time limit is allotted to the members but they are requested to finish their talk within some reasonable time. There will be one moderator in each panel who will act as the "director, co-ordinator and arbiter."

In debates two very small groups are formed with 3 or 4 pupils in each small group. Some controversial issue is selected for discussion. One group speaks in favour of the point at issue and another group speaks against the issue. In each group there will be one leader or main speaker. Good and bad points of the proposition are presented before the house by individual speakers of both groups. The final decision will be made by the whole house.

Role-playing

Another dynamic and modern technique of group guidance is Role-Playing. In role-playing each pupil is assigned a role to play. It is like a drama depicting some scenes from actual life situation. Role-playing may show how a boy selected his course of study after considering all his assets and liabilities, how he fared in his school; how he selected a vocation and how he spent his life there. Again role-playing may show how people work in a factory and how they enjoy their life there. It can depict good and bad aspects of actual life situation. In such a system every pupil will have to play a role at some time or other. The counsellor will select the topic and different pupils for playing different roles. The important point to be remembered here is that the pupils should wilfully accept the idea of the counsellor and spontaneously take part in role-playing.

Pupils should understand the purpose of role-playing. With the help of a short demonstration the counsellor may help them to get an idea of role-playing. All pupils should accept role-playing as a novel process. There should be provision for replaying same scenes if it is found very useful. Different persons may play different roles on successive performances. Some personal, educational or vocational problems and their tentative solutions can be depicted through role-playing.

Members of the whole group will witness the performances

and will try to summarise various points depicted and various solutions suggested in role-playing. There are some psychologists who hold the view that role-playing is a "part of the problem-solving process." It helps pupils to adjust themselves to their environment.

Role-playing is helpful due to following reasons :—

1. It helps a pupil to express himself more freely and to examine how his ideas are accepted by others.
2. To understand how other people think of him.
3. It increases his social skills and self-confidence.
4. It helps an individual to understand true-life problems more effectively than what is understood from the verbal method.
5. It enables a pupil to judge how other pupils of his age feel in a particular social situation.
6. It helps him to explore the alternative ways of attacking a problem.

Role-playing has many limitations so this method should be applied more judiciously. A particular role-playing should be appropriate to the age and maturity of pupils. Threatening scenes should not be shown if pupils are still immature.

Seminars, Workshops, Career conferences, Hobby clubs, career periodical classes, and Science corners may also be organised for giving group guidance.

EXERCISES

1. Define counselling. Discuss the duties of a teacher counsellor in a secondary school. B. T. 1965. C.U.
 2. Distinguish between Directive and Non-Directive counselling. Indicate the advantages and disadvantages of each. B. T. 1966. C.U.
 3. Discuss the characteristics of (a) Directed and (b) Non-directed counselling, showing the advantages of the latter over the former. B. T. 1968. C.U.
 4. What are the merits and demerits of non-directive counselling ?
C. M. C. 1965. W.B.
 5. Discuss with examples, the important characteristics of nondirected counselling. B. T. 1969. C.U.
 6. What are group guidance activities ? What purposes are they intended to serve ? How are they to be organised in order to be effective ? Illustrate your answer with two of the most important activities. C. M. C. 1963 W.B.
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CHAPTER XI

GUIDANCE RECORDS AND REPORTS

School Records and Reports—Basic Principles for Preparing Records and Reports—Different Types of Records and Reports—School Progress Reports—The Counsellor's Interview Notes or Interview Summary—The Cumulative Record Card—Who will collect and Record Data and how—Usefulness of the Cumulative Record Card—Why Cumulative Record Card has not yet been introduced in most of the Indian Schools.

School records and reports are integral parts of the total educational programme. Records and reports are very essential for the proper functioning of good guidance programme. From school records we can get an idea or a running account of a pupil's progress towards adulthood. Records seem to be static but they are actually dynamic in nature. Ordinarily they provide us a picture of a pupil's abilities to face the cultural, social, economic and other opportunities which are before him. Teachers and Guidance Officers may consult specialised records for interpreting various complexities which a pupil meets in the process of maturing and learning. In short they help us to understand a pupil. Records and reports enable an individual student to get some idea of his own strengths and weaknesses. Parents, teachers and future employers may collect information regarding the academic achievements, intellectual and other abilities of a pupil from his school or college records.

Basic Principles for Preparing Records and Reports

We have already stated that records and reports are integral parts of the total educational programme. So all teachers and counsellors who may have to use them should jointly prepare records and reports. Records should be maintained for each and every pupil. Records should contain a continuous description or full history of a pupil beginning from the Kindergarten stage right upto his college. It is still better if it is continued further.

The nature of records and reports will depend upon the aims and purposes of the school and of the pupil. Information about the following heads should be maintained in school records :— Name, Age, Sex, home condition, general abilities, special abilities, work experience, general and special skills, community or social service done, power and nature of thinking, interests, attitudes, health condition, emotional adjustment, physical growth, level of aspiration and values of life.

Traxler₁ gave a long list of basic principles for developing records. For the proper functioning of a school there should be a detailed system of cumulative personnel records.

A school record will show a pupil's achievements in various school subjects and his abilities. Such records may give indications of changing methods of instruction and guidance.

Records should be simple and well planned. They should be maintained in some forms which can be handled conveniently. Records should be reliable, valid and comparable. It will be very helpful if similar records are maintained in all the schools in a particular locality. But special institutions may maintain special records.

Items to be recorded should be logically related. Of course the points to be noted may be changed according to the changes in the theory of education. For proper interpretation and understanding of school records there should be a detailed manual of directions.

Recording system should be less costly and less time consuming. All persons who want to use and interpret school records should be given proper training.

Different Types of Records and Reports

Different institutions maintain records in different ways. Though there are some standardised record forms different institutions may formulate their record forms according to their own purposes and necessities. Most of the available record forms may be classified into a few categories. They are generally classified according to (a) function, (b) filing system, (c) centralising unit and (d) permanency.

1. A. E. Traxler—Techniques of Guidance, New York, Harper and Brothers, 1945, pp. 203-209.

As regards classification of records according to function, Traxler₁ opined that records can be grouped into the following groups :—

- "A. Forms for Registration and classification of pupils,
- B. Attendance Records,
- C. Routine permits and passes,
- D. Reports to parents,
- E. Health and Physical training records,
- F. Special and Cumulative record cards, and
- G. Reports to Colleges and standardising agencies."

Bristow and Proctor₂ classified the school records almost into similar groups.

These records are very useful in guidance programmes. In addition to ordinary guidance records there are a few record forms which are used in Case Studies and in counselling programmes. They are audio tapes, audio-video tapes and other written guidance records.

Erickson and Smith₃ says that guidance records may be "Office records" and "Counselling records". Cumulative records may be considered as office records and are generally kept either in the office of the school or with the head of the institution. Counselling records include the personal data sheet, plan sheet, job-analysis chart, anecdotal records, interview records, self-analysis blanks and so on.

Records may be said to be of centralised type if they are kept either in the office or with the head of the institution. In the decentralised system records may be kept either with the class teacher or with the school counsellor. All information gathered from different sources should be summarised, evaluated and properly interpreted. Summaries of all information are centralised and written in a single form. Cumulative Record Card is an example of centralised type of records.

Descriptions of a few records and reports are given below.

1. A. E. Traxler—Techniques of Guidance, New York, Harper and Brothers, 1945, pp. 203-209.
2. A. B. Bristow and W. M. Proctor—Senior High School Records and Reports. Claring House, March, 1930. pp. 410-432,
3. C. E. Erickson and G. E. Smith—Organisation and Administration of Guidance Services, New Work. McGraw—Hill Book Co. 1947, pp. 151-152.

School Progress Reports

All parents and guardians want to know the rate of progress or developmental behavioural patterns of their children reading in schools. It is the bounden duty of the school authorities to send pupils' school progress reports to their parents because they are very sensitive to these progress reports. The progress report of a pupil should reflect his many sided performances in the school. Pupils themselves are very much benefited by well-planned school progress reports. A pupil who is progressing will be definitely encouraged by a good report. On the other hand a pupil whose performances are not so good will try hard to overcome some of his drawbacks.

In our country we see that our schools maintain school progress reports. These progress reports are sent to parents either every month or twice or thrice a year. Different forms are used by different schools. Our schools use either a printed booklet or a single printed sheet of paper as school progress report. Generally the school progress reports contain some information about the scholastic achievements or marks obtained by the pupils in school examinations. Now-a-days most of the school progress reports contain columns for attendance, conduct, health and medical report, perseverance, personality traits and a few other items like co-curricular activities. But most of the items remain untouched by the school authorities.

In some progress reports, the total number of pupils in the class and the place occupied by an individual pupil are written. Examination marks which are noted in the progress report are raw scores. While judging the scholastic attainment of a particular student we can determine his standing in the class. But we cannot get an idea of his standing in a large or a representative group of students of his age and grade unless we transfer those raw scores into standard scores or determine the age or grade norms.

Any how these progress reports give parents a fair idea about the progress made by their children in schools. The Headmasters and teachers use school progress reports at the time of class promotions. School progress reports serve as a communicating link between the school and the parents.

At the time of class promotions greatest emphasis is given to the marks obtained by students at their Final or Annual Examinations. Modern teachers favour taking monthly or weekly examinations instead of a few terminal examinations and an annual examination. According to them several reports should be prepared during a year. It will be ideal if class promotions are given on the basis of the results of all examinations held in different parts of the year. There are a few good schools which follow this method.

The Counsellor's Interview Notes or Interview Summary.

The counsellors generally keep records of some significant data noted by them while interviewing an individual. A pupil may seek the counsellor's help for the solution of his socio-economic problems or educational-vocational problems. In order to understand the pupil's problems and in suggesting probable remedies the counsellor may have to ask the pupil several questions. He will get a large number of significant data for interpretation and they are to be recorded at the time of interview.

A check-list form may be used for such recording. Following items are generally included in such a check-list form.

- (a) Date.
- (b) Time of Interview.
- (c) Name of the pupil.
- (d) Name of the counsellor.
- (e) Name of the referring person or agency.
- (f) Why interviewed (reasons).
- (g) Statement of problems by the pupil.
- (h) Matters or topics discussed at the time of interview.
- (i) Interpretation of data by the counsellor.
- (j) Prescription and prediction.
- (k) Future needs of the pupil.
- (l) Personal adjustment.
- (m) Other suggestions made.

The Cumulative Record Card

Shertzer and (Peters₁ says that "The Cumulative record is the guidance-focussed instrument on which is recorded the developmental information about a pupil.) This instrument should reflect many of the data in the longitudinal developmental pattern of the pupil. Often, the Cumulative record contains other types of recording instruments, or the information from the other records is transferred to the cumulative record."

(The Cumulative Record Card may be regarded as a detailed account of a pupil's school history. Every incident which happens in the life of a particular pupil from the time of his entrance into the elementary school until he leaves his school or college is recorded in it. It is expected that a Cumulative Record Card will follow a pupil through eleven grades. But some psychologists think that a Cumulative Record Card should continue for a period after a pupil leaves his school, that is even when he enters into an occupation. Information regarding the nature, scope, tenure and his progress in the occupation may also be recorded in such a card. It should, however, be remembered that school progress reports and Cumulative Record Cards are not exactly the same because the purpose of school progress report is to give information to the parents about the academic performances of the pupils in the school, whereas a Cumulative Record Card is used by the counsellors and Headmasters for educational and vocational guidance work.

Different types of forms are used for maintaining cumulative records. The common idea is that the Cumulative Record Card should contain maximum information within minimum space. It should require little clerical work and a large number of significant information should be posted in adjacent places for quick interpretation. Froehlich₂ said about the following three types of Cumulative Record Cards.

(a) Packet or folder-type. A variety of records and other relevant materials may be kept in such a packet or a file.

1. B. Shertzer and H. J. Peters—"Guidance-Techniques for individual appraisal and development." The MacMillan Company, New York, 1965.

2. Froehlich C.—Guidance Services in smaller Schools. New York. McGraw Hill Book Co. 1950, P. 152.

(b) A single card or a folded Card. Here all information and significant facts are written on a single card or in a folded card.

(c) A combination of abovementioned two types. In this type a single card or a folded card is used. In addition to this card there is a file. Some of the facts are noted on the folded card and other facts are written on some forms. All of them are kept within a file.

The packet-type consists of a packet or file in which various records and cards are kept. Cards of different colours may be used for recording different items for ease in handling. In our country some schools use a single card. Some schools have found it convenient to adopt the third or the combined type. The Bureau of Educational and Psychological Research, Calcutta, has formulated a single folded card type of Cumulative Record Card.

Shertzer and Peters¹ said that "Ideally, schools would gather the following data on each pupil :—

- (1) Identifying or Census data.
- (2) Physical health information.
- (3) Home and family information.
- (4) Educational development data.
- (5) Academic test data.
- (6) Vocational interests information.
- (7) Key experimental data.
- (8) Pupil self-concept data."

In most commonly used Cumulative Record Card items, such as, names, age, sex, father's name, address, family history, home condition, economic condition of the family, scholarships, psychological test results (intelligence, diagnostic, special abilities, achievements etc.), personality traits, social ratings, character-development, work habit and health reports are recorded. In addition to these items following are also noted :—
(a) behaviour pattern, (b) mental and physical maturity,

1. B. Shertzer and H. J. Peters—"Guidance—techniques for individual appraisal and development." The Macmillan Company. New York. 1965.

(c) parent's co-operation, (d) mental and emotional conditions, (e) interest patterns, (f) co-curricular activities performed, (g) other accomplishments and achievements in school subjects. Separate compartments are made for recording separate items.

In a school a Cumulative Record Card is to be maintained for each student and continued for several years so that the present achievement of the pupil may be very easily compared with his past achievements. Progress made by a pupil during several years can be seen at a glance in his Cumulative Record Card. A pupil's Cumulative Record Card may be helpful to college authorities if he goes to a college, or to a future employer to whom he may go for employment.

The Cumulative Record Card may be prepared by different schools according to their necessities and purposes. The counsellor and some other members of the staff of the school should consult amongst themselves and plan their Cumulative Record Card. They should decide what information they require, what their data will be, how they will use those data and how they will be recorded.

Educational and Vocational Guidance counsellors use these record cards for guidance purpose. The record cards used by them are often called by some people as Cumulative Guidance Record Cards. Items like career planning, general abilities, special abilities, scholastic achievements, skills and knowledge, work experience, in-service training, energy output, life-values, level of aspiration, post-high school recommendations for pupils are generally introduced into Cumulative Record Card by the counsellors for their specific use.

Who Will Collect and Record Data And How.

It is claimed by some people that a Cumulative Record Card is a confidential record maintained only for the use of the school authorities. Neither parents nor students will be allowed to see the Cumulative Record Card. According to them these can be shown to parents only in cases where parental co-operation will be necessary for remedial measures. These psychologists say

that collection and recording of data in a Cumulative Record Card will be made only by the teachers and counsellors.

But there are other psychologists who advocate that student participation is essential for collecting and recording data. They think that such a system will relieve teachers and counsellors of some work load. Student participation will enable a student to identify his own assets and liabilities. He will get an idea of his own strengths and weaknesses. The teacher and the student together can examine the results of psychological tests, scholastic attainments, samples of student's work and other pertinent information collected. This method will facilitate self-evaluation and enhance self-regard which are regarded essential for success in educational and occupational career.

Hahn and MacLean¹ says that some of the items or information recorded in the Cumulative Record Card may be shown to students and parents but a few items should be kept secret from them. These secret items can be shown to them only in special cases. Items like the following may be recorded by students.

- | | |
|---------------------|----------------------------|
| a. Name. | e. Stated Interests. |
| b. Age. | f. Experience. |
| c. Address. | g. Educational Plans. |
| d. Name of Parents. | h. Vocational preference". |

• But items like the following should generally be collected and recorded by teachers, counsellors and experts.

"(i) Number of days absent, (ii) Discipline, (iii) Personality ratings, (iv) Personality tests, (v) Intelligence test scores, (vi) Physical disabilities and (vii) Health and physical condition etc. etc."

According to the theory of guidance a student will have to make his own choice of the course of study and vocation on the basis of the knowledge of his own assets and liabilities. If the contents of the Cumulative Record Card are not open to

1. Hahn M and MacLean M. S.—General Clinical Counselling. New York, McGraw-Hill Book Co., 1950, p. 98.

him how can he be expected to make his decisions and choices correctly? Therefore it seems reasonable that the Cumulative Record Card should be open to students and parents.

It is better to maintain a chain like Cumulative Record Card for different stages of a student's career, that is one card at the elementary school, one card at the junior high school stage and another card at the senior high school stage. Any how or other the continuity or the Cumulative aspect should be maintained. All the abovementioned three cards should be taken as constituent parts of a whole Cumulative Record Card. Again all pertinent and significant information may be carried over from one card to the next card. A Cumulative Record Card will give us a "Cumulative Picture" of a student.

A Cumulative Record Card should be used and interpreted by duly trained teachers and counsellors. He who wants to use the Cumulative Record Card should have high degree of insight into human behaviour. In-service training may be given to existing teachers in the areas of test construction, interpretation of test scores and Case Study. We know that by applying a psychological test we generally get some raw scores which are almost useless unless we know the nature of our population, the central tendency and the measures of variability of scores of the sample. An user should know whether scores recorded in the Cumulative Record Card are percentile scores or standard scores. So a teacher or counsellor who wants to use Cumulative Record Card should learn a little bit of Statistics.

Just like the most widely used objective tests there should be a manual for the Cumulative Record Card because that will help teachers and counsellors in making entries and in interpreting data.

Psychological tests which are used for making entries into the Cumulative Record Card should be highly reliable and valid tests. Standardised tests of intelligence, aptitudes and scholastic achievements, whose norms are properly determined, may be used safely for getting the correct idea of a student's abilities. Anecdotal Records and Checklists should be very carefully drawn up. A counsellor will have to decide which interest blanks will

have to be used. Teachers' ratings should be made as far as possible objective. According to necessity a three-point or five-point or seven-point scale may be adopted. It is safe to discuss all the data entered into the Cumulative Record Card in a Committee consisting of the Headmaster, Class teacher, other interested teachers and the counsellor. All the recorded data should be very carefully interpreted before issuing a prescription to a particular student.

Usefulness of the Cumulative Record Card.

In New York State an Advisory Committee under the Chairmanship of Dr. John H. Fisher, Dean of the Teachers' College, Columbia University, observed that "the record of a public school pupil should include data necessary to identify him and show his school progress, evaluations made of his work by his teachers, his scores on important tests and examinations, reports on any special aptitudes or weaknesses to be taken into account in planning his programmes, results of physical examinations and recommendations related to them, information about his vocational and other major interests and such other data as may be of value in enabling him to obtain the greatest benefit from his educational opportunities. To a Guidance Counsellor the Cumulative Record Card is the most important tool and a sound basis for knowing and understanding the pupil. The Cumulative Record Card serves as the first source which is to be tapped for discovering the clues to the causes of behaviour problems of pupils, if there be any. It helps the counsellor to get an idea of the abilities and capacities of his pupils.

An examination of all the Cumulative Record Cards of all students of a particular class will show whether the whole class is progressing or is falling behind. If any retarded progression is noted in a class of normal children it may become necessary to revise the existing curriculum or to improve the method of teaching.

For counselling purpose the Cumulative Record Card supply us vital data. College authorities selecting their future pupils

1. "Should Student Records be Made Available to Parents?" American School Board Journal, July-December, 1961, pp. 14-15.

or employers selecting their future employees will certainly want to know the antecedents, assets and liabilities of the intending candidates. Now-a-days college authorities and employers are to depend entirely upon the candidate's achievements in Final Examinations conducted by some external authorities and personal interview. An external examination will give some idea about the scholastic attainments of a pupil but it does not supply a total picture of the pupil. It does not supply any information about the physical development, emotional development, social development and other qualities of the pupil which are considered essential. There are some educationists who think that it is worthwhile to use a Cumulative Record Card in addition to the year ending examination results for selecting candidates for higher education and future employment. It cannot be denied that a Cumulative Record Card is a "must" for counselling and guidance programme and a counsellor should not proceed even a single step without Cumulative Record Card.

Why Cumulative Record Card has not yet been Introduced in Most of the Indian Schools ?

The Cumulative Record Card has not yet been very popular in our country. Most of our schools have not introduced Cumulative Record Card upto now. It is true that at the present moment it is not possible to introduce Cumulative Record Card in Indian Schools owing to several reasons. The following are some of the reasons for which we are unable to introduce Cumulative Record Card in our schools.

- (1) Properly trained personnel is wanting.
- (2) Educational and Vocational Guidance programme has not yet been introduced in most of our schools.
- (3) A spirit of co-operation and a favourable attitude among teachers, parents and administrators have not yet grown up.
- (4) A large number of standardised psychological tests in different Indian languages, such as, aptitude tests, interest blanks etc., has not yet been prepared.

- (5) Only few schools have their own medical officers for medical checking and preparing reports on health and physique.
- (6) Necessary funds required for this purpose are not available.

EXERCISES

1. Why should a secondary school maintain Cumulative Record Card on each and every pupil? Why do teachers use rating as a method of assessment of personality traits? How can such ratings be made reliable? C. M. C. 1966. W. B.
 2. What purpose is a Cumulative Record Card intended to serve? Describe any such card in use in West Bengal Schools and indicate how it can be properly maintained. C. M. C. 1967. W. B.
 3. Describe the general type of Cumulative Record Card. State how cumulative records provide a sound basis for understanding the pupil. C. M. C. 1968. W.B.
 4. What is Cumulative Record Card? State what objectives are served by Cumulative Record Cards in schools? B. T. 1968. C. U.
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CHAPTER XII

ORGANISATION OF GUIDANCE PROGRAMME IN SCHOOLS

Faculty Guidance Committee—Men behind the success of the Guidance Programme—The Administrator or the Principal or the Headmaster—The Teacher and His Role—The Guidance Officer or the School Counsellor—The Role of the School Psychologist—School Health Service Personnel—The Role of the School Librarian—The Pupil Personnel Accounting Staff—The School Legal Staff—Role of the Parents—Help of Other Agencies—The Role of Universities and Colleges—Industry and Labour Unions—Service Clubs—Religious Associations—Organisations established by the Government—Youth Organisations—Conference with parents.

Faculty Guidance Committee

Guidance is not the duty to be performed by a single teacher entrusted with this work but it should be done by all members of the staff. All members of the staff of the school should know the implications of the guidance programme and help to prepare a plan for it. There may be one or two trained teachers in the staff but it is necessary to make arrangement for the orientation of all other teachers of the school in order to get good results. All sorts of prejudices and misconceptions about the guidance programme should be removed from the teachers who may not be willing to co-operate with this programme. All members of the staff should feel that it is a part of their duty to share the burden of the guidance programme.

The Administrators, teachers and the counsellor should discuss about the programme beforehand. Duties of each and every member of the staff should be fixed at the very beginning. Some of the teachers may think that guidance programme will put some extra-work upon them in addition to their already crowded time-table. The Principal or the Headmaster should, therefore, explain very carefully the significance, merits and demerits of the programme in the faculty meetings before the introduction of this programme. The guidance programme may however be introduced in phases instead of its being

introduced all on a sudden. Some time should be allotted to the discussion about the meaning, objectives, techniques and problems of guidance. Guidance services offered by the school should be discussed in staff meetings. After some trial it may be necessary to change some aspects of the guidance programme or to refine some of the methods actually followed in the school. These refinements should be done after discussing the matter in the staff meeting.

A Faculty Guidance Committee should be established in every school for planning and working out the guidance programme. The Faculty Guidance Committee should consist of the members of the staff who are properly trained or have good experience in the working system of the guidance programme. The Headmaster will be the President and the School Counsellor will act as the Secretary of this committee. This committee should be a permanent committee. Even our small schools can establish such committees. The Faculty Guidance Committee will perform the following activities :—

(a) Policy-making and determining the aims of the Guidance programme.

(b) Informing all members of the staff of the nature and purposes of the school guidance programme.

(c) Acquainting parents with the nature, purpose and working principles of the guidance programme.

(d) Informing the students of the purposes and the benefit of the guidance programme. (Students should be aware of the facilities provided by this programme.)

(e) Consider the suggestions for improvement from experienced persons.

(f) Reviewing the working system of the programme.

(g) Evaluating the work done previously.

(h) Review periodically the problems and other difficulties which are faced in the school-wide use of the programme.

(i) Drawing up plans for the development and further improvement of the guidance programme.

These are some of the functions of the Faculty Guidance Committee. This Committee will have to do many other activities too. It will have to carry on follow-up studies and act as a consulting agency.

There are some educationists who are of the opinion that a few student members should be included in this committee. The present author is of the opinion that student members may be included for assuming responsibility for the implementation of the programme but their presence may not be necessary in the committee for policy making and reviewing different problems. There may be a sub-committee named as the Programme Implementing Committee. Student members may be included in this sub-committee.

Men Behind the Success of the Guidance Programme.

There is no denying the fact that teachers, parents and members of the society are jointly responsible for the success of the guidance programme. But it cannot be regarded as everybody's business because in that case it will be nobody's business. Best service can be rendered by the teachers. All activities should be done by a team of workers in unison. A whole hearted co-operation of all members of the staff is essential for the success of the programme. But there must be one duly trained personnel who should be placed in charge of the programme.

Success of the guidance programme will depend upon the knowledge, initiative, agility, foresight, and skill of all persons responsible for the programme. Role to be played by each person should be clearly defined at the very beginning. Each and every member of the staff should very carefully perform his duty. Following persons are generally involved in the guidance programme.

1. The Administrator or the Principal or the Headmaster,
2. The counsellor or Director of Guidance,
3. Class Teachers,
4. School Psychologist,
5. Legal Counsel Staff,

6. A few Parents,
7. The Pupil Personnel Accounting Staff, and
8. The School Physician.

Some of the duties which are to be played by each member of the guidance team are discussed in the following pages.

The Administrator or The Principal or The Headmaster.

The Headmaster of the school is the chief person upon whom the success of the guidance programme will mainly depend. His personal ideas about guidance, his attitude and point of view will definitely influence the entire guidance programme of the school. His favourable attitude towards guidance will encourage the programme. It is an accepted fact that much of the activities of the school reflect the personality of the Headmaster.

The Headmaster should have faith in the guidance service. He will have to support the guidance programme wholeheartedly. According to modern theory, education aims at the maximum development of the child and professes that the child should be educated in consideration of his age, abilities, aptitudes, interests, maturity and needs. If a student is to be educated with this aim in view an effective guidance programme will have to be introduced in the school. If the Headmaster believes in the value of such a programme he will surely encourage it. So his personal philosophy of education will be reflected in the school guidance programme.

A Headmaster who himself is confident that guidance is an essential part of education will convince the members of the school managing committee that guidance programme should be introduced in the school. He will induce the school managing committee to sanction necessary funds for the implementation of the programme. Without adequate funds it will not be possible to organise such a programme in the school.

The Headmaster is to establish and organise the School Guidance Committee or the Faculty Guidance Committee. He will act as the Chairman of the School Guidance Committee. He will allow this committee to meet from time to time and to function properly.

The guidance programme is doomed to be a failure unless a large number of highly qualified and well-trained personnel are involved in this programme. The Headmaster will have to appoint some well-trained personnel for the success of the guidance programme. If such persons are not readily available he may send one or two of his teachers for in-service training. All other teachers should be made cognisant of the need, functions and ultimate goal of the guidance programme. They may be oriented through workshops, seminars, faculty meetings, career talks and case conferences. Some of the teachers may be deputed to attend part-time training courses. The Headmaster will place different persons in charge of different functions of the guidance programme.

The teacher who will be placed incharge of the guidance programme by the Headmaster may be designated as the Guidance Officer or the Counsellor. The Headmaster will have to supply furniture, equipment and other necessary guidance materials to the counsellor for the proper implementation of the programme. The counsellor should be provided with a separate room where he can keep all his guidance materials, interview students and counsel them without any interference. The Headmaster will have to see that all students get some "release time" for getting guidance and counsel from the counsellor. This "release time" should not be regarded as "free period" of the counsellor. The counsellor should in no case be deputed to take classes of absentee teachers during this "release time" of students.

The Headmaster should introduce cumulative Record Cards in his school. He will have to induce all his class teachers to maintain C.R.C. for all students.

He may have to evaluate and revise the school curriculum if he finds it necessary for the proper development of his students. But it may not be possible in our country where the school curriculum is determined by higher authorities.

A Headmaster will have to act as a Public Relations Officer. He will have to keep constant contact with parents and other members of the community in order to let them know what is happening in the school. Parents and others interested in the welfare of students should know how the school guidance programme is working.

The Teacher and His Role

According to many people education is guidance and guidance is education. Knowingly or-unknowingly a teacher has to play a very important role in the school guidance programme. A teacher's contribution to the success of the guidance programme is immense. Guidance is regarded as an integral part of education. So instruction and Guidance cannot be separated from each other. A skilful teacher while imparting education guides his pupils also. A teacher remains in constant contact with his students and acts as a friend, philosopher and guide to them. He is in a favourable position and can very easily influence his students' behaviour pattern. Students require their teacher's guidance in the learning process, developmental process, selection of courses of studies, selection of occupation and in various other ways. A teacher has to undertake the following responsibilities so far as the guidance programme is concerned.

1. He should know his pupils thoroughly.
2. He should see that all the personality traits of his pupils are properly developed.
3. He will have to encourage his pupils to do their work in the class and help them to work to their utmost capacities. He should have fair knowledge of child psychology and educational psychology.
4. He is to provide an ideal environment which is favourable for good learning.
5. He should know how to use guidance materials.
6. He will have to provide his students with information about different courses of studies.
7. He will have to supply occupational information to pupils as far as possible.
8. He will have to consult with parents and other fellow teachers about the school guidance programme.

The Orientation function in the guidance programme is to be done by the teacher. He is the best person in orienting his students to all school programmes. Teachers will tell their pupils what activities are to be done by them in the school. A Mathematics teacher is the best person to tell his pupils about

the nature and importance of Mathematics. No one is in a better position than a Physics teacher in orienting pupils with regard to the nature and importance of Physics. He will be able to tell his pupils which occupations they can join after reading Physics. A Chemistry teacher can orient his pupils to the modern development of chemical industries. During the orientation process a teacher helps his pupils to understand the purpose of his instructions.

A teacher will have to establish good relationship with his pupils. The class-room atmosphere should be manipulated in such a way that students may feel at home there. Some social and recreational activities are to be included in the school guidance programme in order to create the feeling of belonging amongst pupils and to enhance group morale. Such an atmosphere will help the learning process. In such a situation the teacher will be doing some functions of the guidance programme.

The teacher will have to identify the factors which affect the student's progress in learning. The knowledge of the student's level of intelligence, his social and emotional adjustments, his health condition and his economic condition may enable a teacher to diagnose the factors which are inhibiting his learning progress. The teacher will have to help his students to overcome all these inhibiting factors as far as possible. He will have to identify and remove the causes of emotional troubles. If it is beyond his skill he may refer the case to an adequately trained counsellor or to a clinical psychologist.

There may be few students who are for some reasons bewildered and frustrated. Ultimately such students may become prospective drop-outs. Again there may be some students who show definite signs of serious maladjustment. The teacher will try to identify those students by using questionnaires, interview techniques, observation, personality tests and various other devices. He may have to render counselling services in such cases.

A teacher may have to discuss with other fellow teachers about problems pertaining to a particular student's progress or retardation in his learning process. In staff conferences they may have to discuss about the school guidance programme. A teacher may feel difficulty in teaching a student a particular

subject whereas another teacher may have quite opposite impression about the same student. Here the first teacher may have to change his method of teaching and to adopt the second teacher's method of instruction. Surely it is profitable to discuss such cases with other teachers of the school.

Parents in general are very eager to talk with school teachers about the progress of their children. They feel it as a rare privilege if they are invited in schools for discussing about the future prospects of their sons and daughters. Therefore, it will be highly beneficial if the class teachers arrange meetings of parents and teachers occasionally. Utility of parent-teacher conferences has been recognised by all. It will be more fruitful if all other staff members join such conferences.

Through such conferences teachers can gather many valuable information about their pupils. Thereby teachers may come to know the attitudes and aspirations of parents. On the other-hand they may convey information about the rate of progress of their students to parents.

Many parents want to get acquainted with teachers of their children. They want to establish friendship with persons under whose care they have placed their children. All parents want that teachers of their children should be highly educated, well-behaved and capable persons. They think that under the care of a qualified and capable teacher their children will be properly educated. Therefore a teacher will have to establish good and cordial relationship with parents. He should allot some time and energy for this purpose. If proper friendship is established a teacher will be able to counsel parents most confidently.

There are some parents who are quite ignorant of the assets and liabilities of their children. Some parents who are highly educated or occupy very high positions generally think that their children should at least be like them. They do not take into consideration the innate abilities and capacities of their children. In parent-teacher conferences a teacher will be able to make them aware of the innate assets and liabilities of their wards. Parents may be told about the possibilities of future prospects of their children.

Teachers can communicate information about students to their parents through various other means. They can send

progress reports to parents regularly. They can publish news letters and class bulletins at intervals and send those news letters and bulletins to parents. Full details about what is happening in the class room or in the school may be stated in such bulletins. By doing all these things he may help the school guidance programme.

All schools should establish a guidance library and a guidance corner. A class teacher may establish a small guidance library in his class consisting of various guidance materials. The special feature of such a library will be addition of new materials and rejection of old and useless materials.

A teacher will have to learn how to maintain and interpret Cumulative Record Cards. He should be well acquainted with the guidance programme of the school.

Another important function of the teacher is to help the natural development of healthy personality. Students should be allowed to express themselves freely in the class. The emotional tone of the class should be favourable for healthy development of personality traits of children. The teacher should understand how a pupil's behaviour is carried and that deviations are caused by unfavourable conditions of home, school and society. Many emotional conflicts may be caused by unfavourable conditions of the environment. Some of the conflicts can be removed by changing the existing curriculum in order to meet the needs of young pupils. Good reading habits will have to be developed in all children. A teacher will have to see whether his pupils are capable of mixing freely with other children or with other members of the society. He should encourage his students to mix freely and behave freely with other fellow students or with other members of the community. A student should feel secure in his class. If a pupil is kept in isolation and is avoided by his classmates or is constantly criticised by the teacher and his friends or is asked to do some tasks which are beyond his capacities a sense of insecurity may develop in him in course of time. A teacher will have to proceed in a democratic way and teach each pupil according to his needs, interests and abilities.

A teacher may help the school guidance programme by taking active part in the dissemination of occupational informa-

tion to students along with the school counsellor. It has already been said elsewhere that a teacher can give all information about the scope of the subject taught by him. He will have to encourage his pupils to work to their capacity. He should explain the vocational implications of the subjects taught in the class and try to develop favourable attitude towards the subject. He can help the counsellor in arranging and conducting occupational trips. He may explain to his pupils the importance of traits and qualities that are required for success in a particular job. He can help the counsellor in preparing guidance materials.

Again a teacher can make a valuable contribution to the guidance programme by doing some counselling work. There is some difference of opinion as regards the counselling work done by the teacher. One group of people is of the opinion that as the teacher remains in direct contact with the student he is the proper person to do the counselling work. The second idea is that counselling should be done by a specially trained and qualified person generally known as the counsellor. According to this group of persons counselling is a specialised type of job so it should be done by a duly trained person. The third group of persons hold the view that the teacher can do counselling work in certain cases and upto a certain limit but after that he should refer the case to a specialist. But it seems reasonable that as the teacher and the school counsellor are after all two friends, the teacher should help the counsellor in the counselling work. Again it is not too much to expect that the teacher should also learn how to counsel. He should be capable of identifying emotionally troubled pupils and helping them to solve their emotional problems.

Role To be Played by the Guidance Officer or the School Counsellor or the Career Master

There should be an officer who will be responsible for the counselling of students and administration of the school guidance programme. In some schools they are known as teacher-counsellors or as career masters. A teacher-counsellor is a teacher of the school who looks after the school guidance programme and has proper professional training. One group of people think that a counsellor should be a regular subject

teacher of the school. He should do guidance work in addition to his teaching work. They say that because a teacher remains in constant touch with students he is in a better position to guide them. They recommend that the teaching load of a teacher-counsellor should be considerably reduced so that he can devote some of his time to guidance programme. Another group of people think that there should be a well-trained and whole-time counsellor who will take the leadership of the guidance programme.

The counsellor should be a regular member of the teaching staff of the school with very little teaching load. There should be some counsellors at district headquarters who will be responsible for the success of the guidance programme in the whole district or in all the schools which are situated within the district.

For the proper implementation of the school guidance programme there should be a full-time counsellor in each school. But due to financial and other reasons it may not be possible for every school to appoint a full-time counsellor. Small schools or the schools the finances of which do not permit may remain satisfied with part-time counsellors. One counsellor may run guidance programmes of several schools or an existing teacher of the school may be deputed to counsellor's training course and may act as the part-time counsellor i.e., may devote some of his time to guidance programme in addition to his normal teaching duty.

Very often a counsellor is designated as the "Director of Guidance" or in short a "Director". The function of a counsellor or a Director should be as follows :—

- (a) to act as the officer-in-charge of the school guidance programme,
- (b) to do counselling work,
- (c) to prepare guidance tools,
- (d) to prepare and administer psychological tests,
- (e) to prepare and maintain different types of records,
- (f) to collect educational and occupational information and to disseminate those information to pupils,
- (g) to act as a resource person to teachers and parents,
- (h) to act as secretary or convenor of the Faculty Guidance Committee of the school,

- (i) to provide leadership to school guidance programme,
- (j) to act as a Public Relations Officer, and
- (k) to work in co-ordination with parents and other teachers.

He will have to gather information about each student of the school. He should take full responsibility of the school testing programme. He will administer different psychological tests, interpret test scores and record them in the proper place. He will let other teachers know the results of psychological tests.

He will have to remain in constant touch with the local Employment Exchange, the Chamber of Commerce and different Labour Unions in order to collect information about the employment potentialities of the country. He may help his pupils to enter into occupations in accordance with their age, needs, interests and abilities. He will have to arrange for practical training of his pupils by some prospective employers.

Rothney and Roens₁ suggested that a counsellor should do the following activities :—

“1. Helping students in their choice of courses of studies and curricula.

2. Administering tests and interpretation of test results of students.

3. To identify reasons for student's unsucccess and to suggest remedial measures.

4. To encourage students to exert their best efforts to achieve their goals.

5. To gather and disseminate occupational information and induce students to gather more and more information.

6. To assist students to choose higher educational institutions for their further education and training.

7. To give information about stipends and scholarships which are available in different places.

8. To assist students in vocational placement and to tell them how to secure a job. He will have to perform job analysis and to acquaint his students with the training requirments of different occupations.

1. Rothney. John W. M. and Roens. Bert. A.,—Counselling the Individual Student. New York, William Sloane Associates, 1949, p. 5.

9. To help students in their adjustment problems. If he can identify any case of emotional trouble he will have to try to remove the root causes of those troubles. If he is unable to do that job he may refer the case to a specialist.

10. He will have to do all activities concerning counselling."

In addition to all these activities a counsellor will have to undertake the responsibility of developing a research programme. There must be provision for regular evaluation of the guidance programme. He will have to ascertain whether his programme of work is progressing satisfactorily or it is necessary to change both the guidance programme and the curriculum. Research is necessary for many other reasons. Research studies should include follow-up studies.

He is to make arrangements for the circulation of educational and occupational information materials to his students. He can publish monographs and bulletins. National Employment Service Department and the Publicity Department of the Government publish booklets and pamphlets from time to time. The counsellor will have to collect them and to place them either in the guidance library or in the guidance corner. He can either prepare or collect filmstrips and other audio-visual aids and display them to his pupils. He is in a better position to help his pupils in making proper adjustment educationally, socially and vocationally.

Teachers and parents look at the counsellor for constant help. They accept him as a consultant and a resource person. Students want his help in solving several personal problems. He is the leader and the key person of the school guidance programme. Therefore a counsellor should be a capable and a resourceful person. His zeal for work and ingenuity is necessary for the success of the school guidance programme.

The Role of the School Psychologist

The function of a school psychologist is almost similar to that of the school counsellor. It is desirable that each school will appoint one psychologist but where it is not possible to do so the purpose may be served if one psychologist is appointed to work in two or three schools. He should be properly trained to deal with both normal and abnormal children. His main duty will be to

administer different psychological tests and explain test scores to pupils, teachers and parents. He will have to take active part in organising and executing the school guidance programme.

Main duties of the school psychologist will be as follows :

1. He will administer psychological tests to individual students, interpret test scores, counsel students and carry on follow-up work.

2. He will conduct group testing in order to identify those students who require special types of instruction.

3. He will have to find out children possessing superior abilities but doing inferior work. He will find out children possessing special abilities or children whose activities can not be approved by the society. The psychologist will have to recommend ways and means for the proper education and improvement of behaviours of such pupils.

4. He will have to help the school counsellor in dealing with problem children. He will act as a consultant to teachers and the counsellor if there be any problem in the guidance work, in making provision for specialised education, in settling class promotions, in preparing progress reports and in remedial education.

5. He should be an expert in evaluation work, learning theory, group dynamics and mental hygiene. He should take interest in analysing the behaviours of emotionally troubled children, diagnose the reasons of such troubles and prescribe remedial measures. He may refer special cases to child guidance clinics and organise remedial classes for others.

6. He will have to carry on research work for the improvement of the school guidance programme.

School Health Service Personnel

Health services staff should include a full-time physician, full-time psychiatrist, full-time dentist and school nurse. There should be provision for clinical service in each school. If it is not possible on the part of a single school to appoint such a big staff the Government may engage a team of workers for rendering health services to all schools of a sub-division or of a district.

The physician will have to conduct health examination of all school children at regular intervals. He should be held responsible for the medical treatment of all cases of normal physical ailments and will request parents to take their children to specialists in acute cases.

Though it is expected that a guidance personnel should be capable of dealing with cases of mental illness still in some cases the emotional troubles may be so serious or so deep rooted that such cases cannot be dealt with by the school counsellor. So such cases of acute mental diseases or emotional difficulties should be dealt-with by the school psychiatrist.

Very often school children suffer from dental troubles. Therefore there should be a full-time dentist for rendering dental treatment to all children. He will have to organise periodic dental examination of children.

The most important member of the school health service staff is the school nurse. She will visit the school regularly and will remain in close contact with the class teachers. Her contribution to school guidance programme is immense. She will conduct physical examination of children and will ascertain the physical fitness of all pupils. She may ask a pupil to select a particular course of study in the light of his health condition. If she thinks it necessary she may refer a pupil either to a doctor or to a dentist for medical or dental treatment. She may also suggest remedial measures. She should have an office and should maintain individual health records of all students. These records are very useful.

The Role of the School Librarian

The school librarian can contribute much to the success of the school guidance programme. He can help the counsellor in disseminating educational and occupational information. He can organise a guidance library within the school library. He can maintain an "Occupational Shelf" containing news bulletins and occupational pamphlets within the library. He can make arrangements for the display of various charts and posters. New guidance materials, books and journals which have just reached the library may be displayed in the library show case.

Functions of the Pupil Personnel Accounting Staff

Pupil Personnel Accounting Staff of the school will maintain constant liaison between the school and the students' home. It will keep students' attendance records. Students who do not attend schools regularly should be interviewed. Causes of their absence from the school should be determined. Every effort should be made to remove those causes. Irregular students will have to be encouraged to attend classes regularly. Unwilling students should be helped to enter into an occupation.

A few duly trained people capable of dealing with delinquent children and children suffering from emotional troubles should be included in the pupil personnel accounting staff of the school.

The Role of the School Legal Staff

There should be an attorney in the School. He will be placed incharge of the administrative duties involving legal aspects. In a big school consisting of a big heterogeneous group of children it is likely that problems having complex legal status will crop up. The school attorney will be able to advise both the teachers and the pupils in cases of necessity. Even parents may come to him for advice.

Role of the Parents

Parents are in no way less important than teachers in making the school guidance programme a success. They will be able to supply the counsellor many accurate and important information about their children. From parents the counsellor will be able to collect information about the pupil's home condition and economic condition.

Help of other Agencies

The counsellor will have to work in co-ordination with the following outside agencies for successful execution of the school guidance programme.

1. Child guidance clinics,
2. Service Clubs,
3. Parents Organisation,
4. Medical Associations,
5. Students' Unions,
6. Religious Associations,

7. Industry and Labour Unions, and
8. Similar other organisations.

The role of Universities and Colleges

Universities and Colleges also maintain Educational and Vocational Guidance units for helping their students. They render counselling services to their students. The Department of Education and the Department of Psychology of the University may undertake the responsibility of the training of counsellors and other guidance personnel. They can carry on some research work in this area.

Industry And Labour Unions

The counsellor will have to take help of Industrial organisations and Labour Unions. Several industrial firms give practical training to their employees. Some of them award scholarships and stipends to some poor but meritorious students. Through their help a counsellor can arrange practical training of some of his students. He can help his students to get jobs in those industrial firms. Labour Unions are also very helpful in this matter. Some of the industrial firms and labour unions maintain guidance units also.

Service Clubs

Service clubs help countrywise guidance programme by providing financial aids. These clubs organise occasional career conferences and trips to different business and industrial organisations. Some of them have established occupational information libraries. Very often they award scholarships and stipends to deserving students for higher studies and practical training.

Religious Associations

Religious Associations make provision for moral education and religious teachings. Such teachings may remove many mental conflicts of the students who have them. A counsellor may take help of religious organisations while dealing with delinquent students. Religious Associations undertake programmes of social service. A counsellor may encourage his students to participate in such social service programmes. So we see that

Religious Associations can make important contributions to the school guidance programme if the school counsellor seeks their help.

Organisations Established By The Government

Our national Government has established Employment Exchanges in various parts of the country in order to help unemployed persons to get jobs. Vocational Guidance Units have been established in all Employment Exchanges. They are giving Vocational Guidance to all persons who approach them for assistance. They generally help normal youngmen and women in getting jobs but they are at present helping physically and mentally handicapped persons also. Employment Exchanges are now-a-days rendering community guidance services. They are trying to make arrangements for vocational rehabilitation also. The Regional Employment Exchange of Calcutta makes arrangements for training and placement of the deaf, blind and other candidates having special needs. It will be highly beneficial if the school counsellors work in co-operation with the local Employment Exchange.

Youth Organisations

There are several youth organisations which organise different worthwhile programmes, such as, sports, gymnasiums, recreational functions and social service activities. These activities help in combating juvenile delinquency. Children of different races, nationalities, economic, religious and social status may become members of such organisations. There are several denominational youth organisations also. Young Men's Christian Association and Young Women's Christian Association are examples of youth organisations. The counsellor may work in co-operation with these organisations.

Conference with Parents

Improvement of home-school relationship is essential for successful implementation of guidance programme. Active and willing co-operation of parents will surely make the school guidance programme a successful programme. But parents will co-operate only when they will feel that the school authorities are trying their best for the proper development and progress of

all students. Good work done by teachers will surely impress parents.

Teachers should know the parent's method of rearing children. The contact between the teacher and the parents may be of the following nature :

The teacher may directly interview and counsel parents. This is known as the direct method. The parent-teacher contact may be established indirectly either through correspondence or through telephone conversations. Parent-teacher conference may be held on some scheduled date on previous engagement or by incidental school visitation by parents informally. Out-of-school contact between the teacher and the parent may be held either on the street, parks, in shops or in religious places. Casual conversations may take place between them in various other situations.

The counsellor can arrange parent-teacher conferences for getting the parents' co-operation for the proper implementation of the school guidance-programme. The parent-teacher conference is a two-way process. Through such conferences parents will learn what the teachers are doing for their children at school and on the otherhand the teachers will get all information about the child's work at home.

The counsellor will find it very useful if he organises parent-teacher conferences regularly. If such conferences cannot be organised regularly it may be organised whenever convenient.

Parents want to discuss freely with the teachers and the counsellors about the activities of their children at school. They want to get some information about the child's development and progress in the school. As teachers are familiar with the child's development and progress at school they should correctly report everything about the child to his parents. Parents may want to know about the school programme and the school curriculum.

If any behaviour problem is noticed in any child the teacher may discuss those problems with the child's parents. If it is suspected that such problems have been caused by abnormal behaviour of the parents they may be requested to behave with the child in a proper way at home. If an emergent situation arises the teachers and the parents should discuss the pros and

cons of the problem in order to reach a vital decision and to take necessary steps immediately.

A counsellor may prepare a check list and fill up the check list during the conference. Thereby all information gathered at such conferences will be permanently recorded. The following may be the items of the check list.

1. What is expected from the child ?
2. Number of brothers and sisters.
3. How are the child's sibling relations ?
4. How is the emotional tone of the child's home ?
5. The child's attitude towards the opposite sex.
6. What is the condition of the child's cultural life ?
7. How the values of education are appreciated at home ?
8. What educational facilities are provided to the child ?
9. Whether the child reads regularly at home ?
10. Is there anybody to help the child to prepare his studies ?
11. Whether the child is provided with all books and other materials ?
12. What is the nature of the family discipline ?
13. The child's relationship and closeness to other members of the family.
14. Whether the child is given too much pressure for studies and other things.

The conference may be held for a short time or a long time. It will depend upon the nature of the agenda of the conference. Whatever may be the duration of the conference the teacher should honestly and wholeheartedly conduct it. He should pay due respect to the parents' ideas and utterances. Parents should be allowed to express themselves freely and the teacher need not proceed very quickly and jump to a conclusion without hearing all the parents. He should not act like a dictator and take seriously whatever is spoken by the parents. He will not quarrel with the parents and will not behave in an indecent manner. He should give patient hearing to all parents and admire good speeches. He should not try to shift all burden upon parents.

EXERCISES

1. Discuss the duties and responsibilities of a Teacher-Counsellor or Career Master in a Secondary School. B. T. 1967. C. U.
2. Describe briefly the activities of a Career Master in a Higher Secondary School of West Bengal. C. M. C. 1969. W.B.
3. Why should a multipurpose school have a Career Master on the staff and what should be his relation with other teachers of the school? C. M. C. 1966. W.B.
4. "Guidance is not the task of a few specialists alone but it involves the co-operation of parents, guardians and members of the entire teaching staff of the school." Examine the statement. B.T. 1967. C.U.
5. Why should the Headmaster and other teachers of a Multipurpose School be involved in the school guidance programme? State the roles to be played by them. C.M.C. 1968. W.B.
6. Discuss the need of parent education for the success of school guidance work in India. Suggest some ways and means by which you may try to educate the parents. B.T. 1966, C.U.
7. How do parents influence a student's selection of stream? If parental expectations do not seem to be justified in respect of any particular student, what steps should the Career Master take? C. M. C. 1969. W. B.

CHAPTER XIII

INTERPRETATION OF TEST RESULTS

Collection of Information About a student—Raw Scores—Derived Scores—Percentile and Percentile Rank or Percentile Scores—Score Bands or Percentile Bands—Standard Score—Profiles—Profile Bands—Precautions to be Undertaken in Interpreting Test Scores.

Collection of Information about a Student

We have so long discussed the different tools and methods for collecting different types of information about individual students. Observation techniques, interview records, school examination results, questionnaires, standardised achievement tests, different objective tests, teacher's ratings, interest inventories and personality tests are frequently used by teachers and counsellors for collecting information about students. Different sets of data are collected by different means. This piling up of information about a student carries no meaning unless and until they are properly arranged and duly interpreted. Collection of data is a means to an end and not the end in itself. All these information will have to be summarised and interpreted by the counsellor in order to get an idea about the composite or total picture of an individual student. They are to be summarised and arranged in such a way that they can very easily indicate which course of study or which type of occupation will be most suitable for a particular student. The summary sheet should enable a counsellor to discriminate a capable student from an incapable one at a glance.

In interpreting test data a direct comparison will have to be made between measurements of various traits, achievements in different school subjects and different other characteristics. Different tools may be used for measuring different traits. Even a single trait can be measured by different tools under different circumstances. In physical measurement it is easy to compare one test score with another. But it is not so easy in the case of psychological tests. In the case of linear measurements we can use different units such as inch, foot, yards or centimetre, metre and can convert one into another. In physical measurements we have a definite starting or zero point.

But in educational measurement we arbitrarily select a zero point. If a pupil gets a zero score in a geography test we cannot say that he has zero knowledge of geography. It may be that the questions which the student can answer correctly have not been included in the test. It is very difficult to say where the true zero point is in tests for measuring mental abilities and achievements. In psychological tests we assume a certain degree of basic ability or knowledge and begin to measure from there. We cannot say that a score of 100 in a certain test is just double the achievement of a score of 50 and 4 times of a score of 25. Therefore scores in psychological tests should be understood in relative terms. We should say of "more" or "less" of a given trait instead of "double as much as" or "4 times as much as."

Generally in our tests the units of measurements are not equal at all levels and at all time. A difference of 10 scores in an easy test is not equal to a difference of 10 scores in a difficult test.

There is a large number of scoring systems. Each of them have their own limitations and characteristics. In order to avoid all these difficulties, to provide units having uniform meaning in measurements of different traits and to make them comparable, different methods of expressing test scores have been adopted. Let us describe some of the most common types of modified scoring methods which have recently been devised for expressing raw test scores in order to make them comparable and interpretable measures.

Raw Scores

A raw score means "the number of points received" or "the number of correct responses" given by a subject on a test when administered properly and scored according to directions. If a credit of one point is given for each correct response and a pupil answers 45 items correctly his raw score will be 45. The items may be valued or weighted in different ways but the resulting point score will be regarded as a raw score. All the points achieved by a pupil may be added together but it will remain uninterpretable because we will not be able to say whether his performance is high or low unless we compare his

scores with the scores of other students of his age or grade. A score becomes meaningful when it can be compared with the scores of other pupils of the same grade or of the same age.

Some people will say that a student's total score becomes meaningful if the percentage of items answered correctly by him is determined. In a mastery test the "percentage correct" may show how far the pupil is from complete mastery. But in actual practice in most of the cases we cannot clearly say what is the "absolute standard of mastery". So the principle of the "percentage correct" is of little help to us.

A raw score may serve some quick class room purposes but it cannot be used beyond that. Therefore it is difficult to interpret a raw score. Again the raw scores on different tests cannot be directly compared with one another. Scores of an individual student should be interpreted in the light of the scores of other students of his age or grade. This group of students whose scores form the standard of comparison for the scores of individual students is known as the norm group.

Derived Scores

As the raw scores are rather meaningless, and on several occasions we will have to compare the scores in different tests we badly need "a unit of measurement which has fairly uniform meaning from one test to another and from one part of the scale to another". Statisticians have supplied us "Derived Scores" in order to get rid of this difficulty.

Derived scores are very helpful in this respect. "A derived score is a numerical report of a test performance in terms of the pupil's relative position in a clearly defined reference group". A raw score can be converted into a derived score according to different methods. Age equivalents, grade equivalents, percentile ranks and standard scores are the most commonly used derived scores.

Most of the test makers prepare test manuals wherein they present raw scores and derived scores in parallel columns for easy conversion of a raw score into a derived score.

Our purpose is to compare the performances of a particular pupil with the performances of other pupils of his age or grade.

Occasionally we may have to compare his performance on one test with his own performance on another test or his performance on one form of a test with his performance on another form of the test.

A comparative study of the different test scores will enable a counsellor to determine a student's educational growth, diagnose his weaknesses and predict his future success in his studies and vocations. For guidance work we generally require different types of derived scores. Percentile scores and Standard scores are generally used for this purpose. It is better to have some idea about them.

Percentile and Percentile Rank or Percentile Scores

Before going into details we should try to understand very clearly the meanings of and differences between the terms percentiles and percentile ranks (Or percentile scores). Percentile is a point in a frequency distribution below which lies a certain percent of the scores or measures. As for example we can say that 50% of the scores or measures lie below the median or the 50th percentile. Percentile is designated by the symbol P_n . Thus 25th percentile or P_{25} mean that 25% of the scores lie below this point. When necessary P_{60} , P_{70} , P_{80} , and P_{90} can be calculated from the frequency distribution and a list of graded percentiles can be prepared. The upper limit of percentiles is P_{100} and the lowest limit is P_0 .

Educationists and psychologists very frequently use percentile ranks in describing test performance of a pupil. Percentile ranks are widely used in order to arrange pupils in order of merit for attributes which cannot be measured directly. (As in tests for aesthetic appreciation, leadership, inventiveness, handwriting, social adjustment etc.).

If we have 10 scores of 10 dimensions we can arrange them in rank order in consideration of their values or weights. If we have 100 such scores we can arrange them also in rank order. Highest score or value is placed in the first place or at the top and the lowest score is placed at the bottom of the scale. Such a scale is known as a scale of 100. "A percentile rank (or PR or Percentile Scores) indicates a pupil's relative position in a group in terms of the percentage of pupils scoring

below him." In a certain test performance a pupil's "percentile rank (PR)" indicates the pupil's "position on a scale of 100 to which his scores entitles" him to get a place. As for example if we find a pupil's raw score is 45 and his percentile rank is 70 then we can say that 70% of the pupils in the reference group scored lower than 45. We can also say that this particular pupil's score surpasses scores of 70% of pupils of the reference group and 30 percent would score above him.

When percentile ranks for a particular test are arranged in a column side by side with the column of raw test scores it is known as percentile norm chart. If there are several tests or sub-tests in a battery of tests, raw scores for each test can be written in separate columns parallel to the percentile rank column. In order to determine the percentile rank for any given raw score from this chart one is to locate the raw score in the proper column and then to see the corresponding percentile rank at the percentile rank column shown at the side of the table. If the raw score is 45 it will be found to be equivalent to a percentile rank of 70 (as stated above).

This method has definite advantages. It can be readily understood by persons who are not specially trained even. Percentile norms chart helps pupils and parents to understand test scores easily.

But the applicability of percentile ranks is not free from limitations. Whenever we are to interpret a percentile rank we shall have to state the nature of the group of pupils on which it is based or related. It will not be exactly correct if we say that a pupil's percentile rank is 70. But the correct statement will be that the pupil has the percentile rank of 70 "in some particular group." A percentile rank of 62 of a pupil amongst high school students may be 48 or something else in a group of college students. So the reference group used for comparison should be stated.

Another point to be noted is that percentile units are not equal through out the whole scale or on all parts of the scale. Generally scores are found to cluster together around the middle of the distribution. A percentile rank difference of ten between percentile scores of 45 and 55 would indicate a much smaller difference in test performance than the difference

between percentile scores of 85 and 95. A pupil who is placed near the middle of the scale can better his percentile rank by ten points by increasing his score just a few points. Whereas a pupil whose percentile rank is very high, that is where the scores are very scarcely distributed will have to increase his score to a large extent in order to enhance his percentile rank by 10 points. So small differences near the middle of the distribution can be easily ignored. Again as the units are not equal through out the whole scale the percentile scores cannot be totalled or averaged.

Score Bands or Percentile Bands

Due to various reasons it has been found to be convenient to represent test scores in the form of scorebands instead of expressing them as specific points on the scale. It is better to express test performance in the form of bands. A single score of a pupil on a particular test for one time only may not be his true score. It would be better if we could apply a test for several times and determine the scores achieved by a pupil on different occasions. His true score would be the average of all these scores. But in actual practice it is not possible. So we should take into consideration the standard error of measurement in determining the probable "true" score of a pupil because it is known that in two cases out of three the true score will fall within one standard error of his obtained score. So a large number of psychologists use percentile bands in reporting scores. The percentile band is the range which extends one standard error of measurement above and below the pupil's obtained score. The percentile band may be prepared by adding to and subtracting from the obtained score one standard error of measurement.

Standard Score

Another method of showing the relative position of a pupil in his group is to convert his raw score into standard score. The standard score expresses the deviation of a pupil's test performance from the mean of the sample group in terms of standard deviation units. It will state how many standard deviations either above or below the average falls an individual's score. This will enable us to interpret the relative position of a

pupil in his group. The Mean (M) is the arithmetical average which can be calculated by adding all scores and dividing the sum by the number of scores. The Standard Deviation (SD or σ) is a measure of the spread (or Scatter) of scores. The spread of scores may be quite different on two tests although the Means are the same. The actual method for calculating Mean and SD can be learnt from any standard book on statistics.

For convenience the base line of the symmetrical bell shaped curve known as the normal probability curve may be divided into six standard deviation units as shown in the adjoining figure. The middle point of the base line represents the Mean or 0. Each portion under the curve will contain a fixed percentage of cases. The standard deviation units on the right hand side are designated as +1 SD , +2 SD and +3 SD . Similarly the three standard deviation units on the left hand side are designated as -1 SD , -2 SD and -3 SD . About 34 per cent of cases lie between the mean and +1 SD , 14 per cent of cases lie between +1 SD and +2 SD , and 2 per cent of cases lie between +2 SD and +3 SD . Similar will be the condition in the standard deviation intervals which are below the mean. Only about .13 per cent of cases fall above +3 SD or below -3 SD . For all practical purposes we can ignore all cases which fall beyond -3 SD or +3 SD .

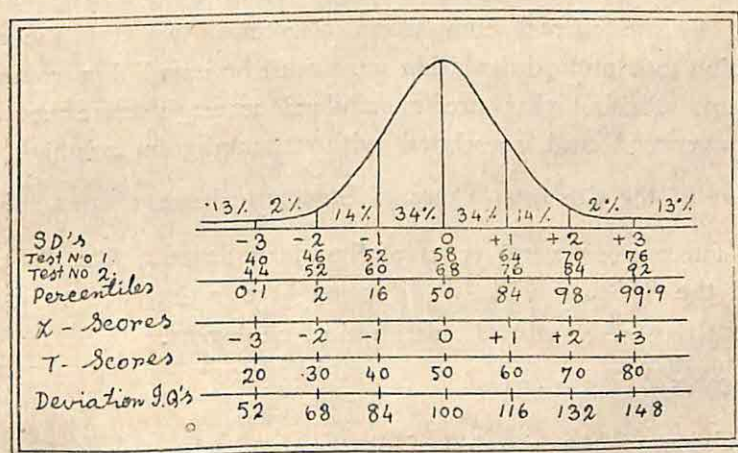


Fig. 1. Comparison of Various Standard Scores in a Normal Distribution curve.

In the figure shown above standard deviation units and raw scores of two tests are shown below the line of the normal curve in order to make the thing more clear. An illustration is given below for clear understanding. Suppose in two tests we have the following means and standard deviations.

	Test No. 1.	Test No. 2.
M	58	68
SD	6	8

In Test No. 1 we have $+1$ SD is equivalent to 64 ($58+6=64$) and $+2$ SD is equivalent to 70 ($58+6+6=70$). (Test No. 1). Again -1 SD is equivalent to 52 ($58-6=52$). Same rule can be applied to the case of Test No. 2 also.

If all the raw scores on the two tests are converted into standard deviation units it will be possible to compare directly the scores on the two tests. As for example we can say that a score of 67 on Test No. 1 and 80 on Test No. 2 are equal because both of them are $+1.5$ standard deviation units above the mean. When all the raw scores of the two tests are converted into standard deviation units the raw scores will become unnecessary for comparison. It is to be noted that $+2.5$ SD ($70+3=73$) on Test No. 1 is superior to $+2.0$ SD (84) on Test No. 2. The size of the raw score will have no consideration here. Again another thing to be noted here is that for the correct comparison of scores on two tests the conversion to standard deviation units must be based on a common group. Psychologists prefer standard scores because they can be averaged and correlated without making any mistake.

Some of the Common Types of Standard Scores

There are several types of Standard Scores. The Z-Score and the T-Score will be discussed here as they are most frequently used by educationists and psychologists.

Z-Scores

Z-Score is the simplest of all the standard scores. Here the test performance is directly and simply expressed "in terms of the number of standard deviation units a raw score is above or

below the mean." The Z-Score can be calculated with the help of the following formula.

$$\text{Z-Score} = \frac{\text{Raw Score} - \text{Mean of the Raw Score Distribution}}{\text{Standard Deviation}}$$

$$\text{Or } \text{Z-Score} = \frac{X - M}{SD}$$

Here X = the particular raw score.

M = arithmetic mean of the raw score distribution.

SD = standard deviation of raw scores.

For example, Z-Scores for the raw scores of 72 and 56 on our Test No. 2 having mean = 68 and $SD = 8$, may be calculated in the following way.

$$\text{Z-Score} = \frac{72 - 68}{8} = .5 \quad \text{Z-score} = \frac{56 - 68}{8} = -1.5$$

When the raw scores are smaller than the mean the Z-scores will have negative values. It should be noted that half of the Z-scores are negative and are expressed in decimal numbers. These are two major disadvantages of the Z-scores. Psychologists transform raw scores into other types of standard scores in order to eliminate these drawbacks.

T-Score

Originally McCall introduced the idea of T-scaling while preparing some reading tests applicable to the elementary grades. Tests were applied to a group of unselected twelve-year-old children. Obtained scores were normalised and were expressed in terms of twelve-year-old T-Scores.

Now-a-days when a test is applied to a large number of subjects the obtained scores are taken to be normally distributed scores and T-Scores are computed with an arbitrary mean of 50 and a standard deviation of 10. T-Scores can be computed by multiplying the Z-Score by 10 and adding the product to 50 the arbitrarily selected new mean.

Thus T-Scores are computed by the following formula.

$$\text{T-Score} = 50 + 10 (\text{Z-Score})$$

$$\text{Or, } \text{T-Score} = 50 + \frac{10 (\text{raw score} - \text{Original mean})}{\text{Original standard deviation}}$$

Application of this formula will move the decimal point of the Z-Score one point to the right hand side and remove all negative signs. Let us calculate the T-Scores of raw scores of 72 and 56 on our Test No. 2 by applying this formula. We remember that Z-Score for 72 is $\cdot 5$ and the Z-Score for 56 is $-1\cdot 5$.

So T-Scores will be as follows :—

$$\text{T-Score (for 72)} = 50 + 10 \times \cdot 5 = 55$$

$$\text{T-Score (for 56)} = 50 + 10 \times (-1\cdot 5) = 35$$

A T-Score of 55 represents a score one-half standard deviation (adopted SD) above the mean (adopted mean). A T-Score of 35 represents a score one and one-half standard deviation (adopted) below the mean (adopted). A T-score of 60 means a score one standard deviation above the mean. In this way T-Scores can be directly interpreted.

It is better to say here that we can use different values for the adopted mean and standard deviation. If the new mean is taken to be 100 the new standard deviation will have to be taken as 20. In the Wechsler Bellevue Intelligence Scale the standard scores were calculated with a mean of 10 and a standard deviation of 3. Even a mean of 500 and a standard deviation of 100 can be used if desired.

The T-Scores computed by the above mentioned method should not be confused with the T-Scores computed in cases of actually normalised scores. The method for calculating standard scores of normalised scores, which are often named as Z-Score and T-Score, is different and a bit complex. A complex process will have to be adopted in cases of normalised scores. As that method is not regarded as essential for ordinary purposes it will not be discussed here. Any standard book on Statistics may be consulted for this purpose.

Profiles

A profile is a graphical representation of the subject's performance or test data. A profile enables a counsellor to identify a subject's relative strengths and weaknesses. It has already been said that by converting a subject's raw scores on different tests to standard scores or percentile scores they can be compared

directly. Different profiles for a subject's performance on different tests are drawn side by side for comparison. Test scores are plotted as specific points on the scale and are joined by lines in order to show the patterning of the subject's attainments, abilities, interests and personality traits. Now-a-days almost all standardised tests have provisions for plotting profile curves or bands.

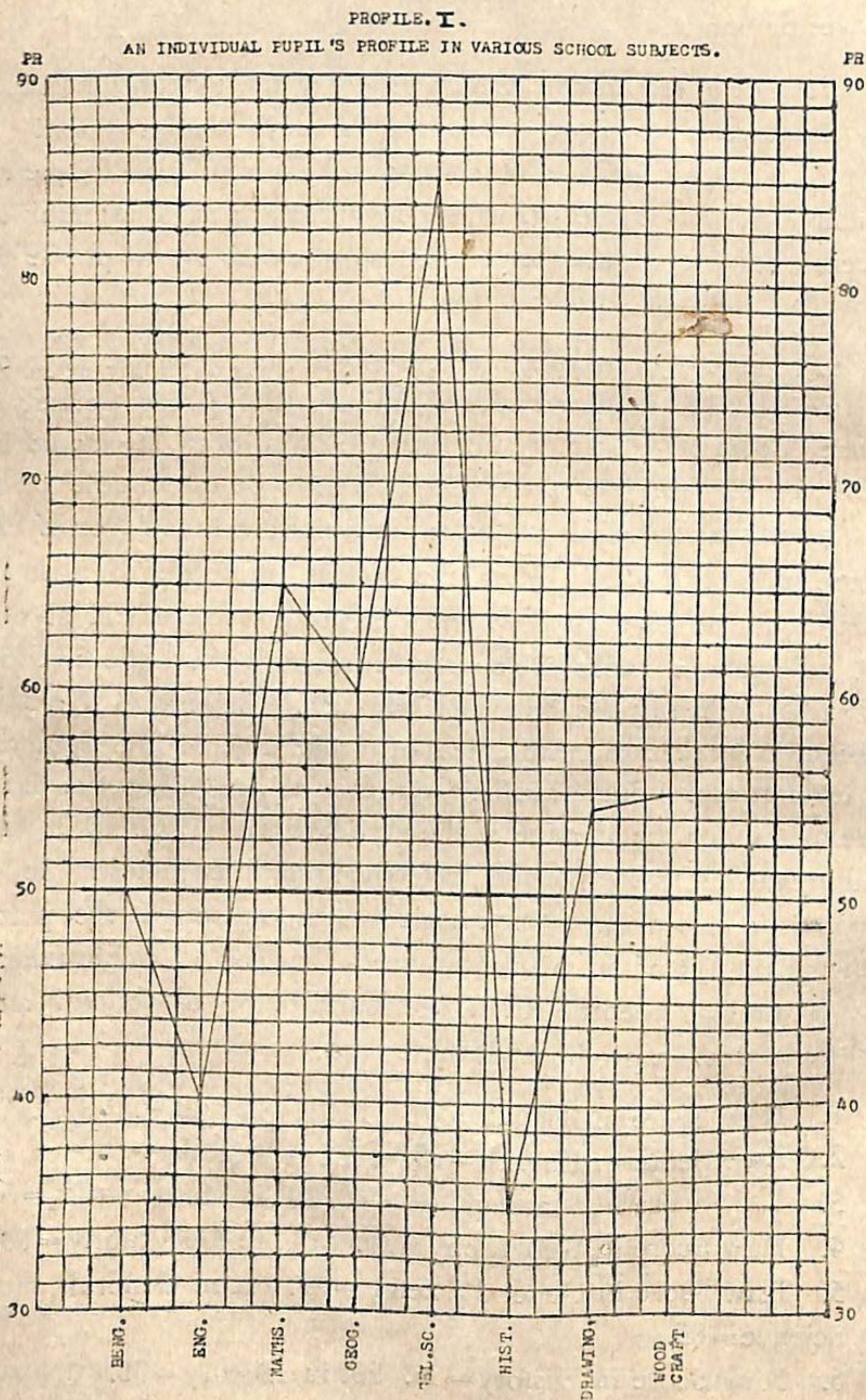
Now let us see how to draw a profile of the Percentile Ranks in various school subjects or abilities for a particular pupil. It is possible to calculate percentile ranks from the frequency distribution of scores. If the percentile ranks of a pupil on several tests are known they can be represented on a profile as shown in the figure drawn below.

In a piece of graph paper scores of different tests are laid off on the X-axis at regular intervals and on the Y-axis Percentile Ranks beginning from 1 to 100 are laid off. It should be remembered here that as the PR is taken to be the middle point of an interval no pupil can have a percentile rank of 0 or of 100 in the scale of 0 to 100. On the Y-axis one side of a small square may be taken to show one unit of increase of PR or one PR. Percentile ranks are counted upward because the first row (top row) indicates the best performance. Generally the 50th percentile is taken to be the median or average of the standardisation group. Each profile requires a normal reference line. The median or the average of the standardisation group is usually regarded as the normal reference line in each test. So it is convenient to draw a thick horizontal line through the point showing the PR of 50. Suppose in a battery of achievement tests a pupil's Percentile Ranks are found to be as follows and we are to draw a profile with these data.

1. Raw Score in Bengali = 40. PR in Bengali = 50.
2. Raw Score in English = 39. PR in English = 40.
3. Raw Score in Mathematics = 60. PR in Mathematics = 65.
4. Raw Score in Geography = 25. PR in Geography = 60.
5. Raw Score in General Science = 39. PR in General Science = 85.
6. Raw Score in History = 36. PR in History = 35.

7. Raw Score in Drawings = 45. PR in Drawing = 54.
8. Raw Score in Wood Craft = 52. PR in Wood-Craft = 55.

Profile Figure I



This profile indicates that the particular pupil's performances are just average in Bengali and much below average in English and History. But his performances in Mathematics, Geography and General Science are much higher than average. His performances in Drawing and Wood Craft are almost average. A counsellor will naturally say that this pupil will do good in the Science stream.

Profile Bands

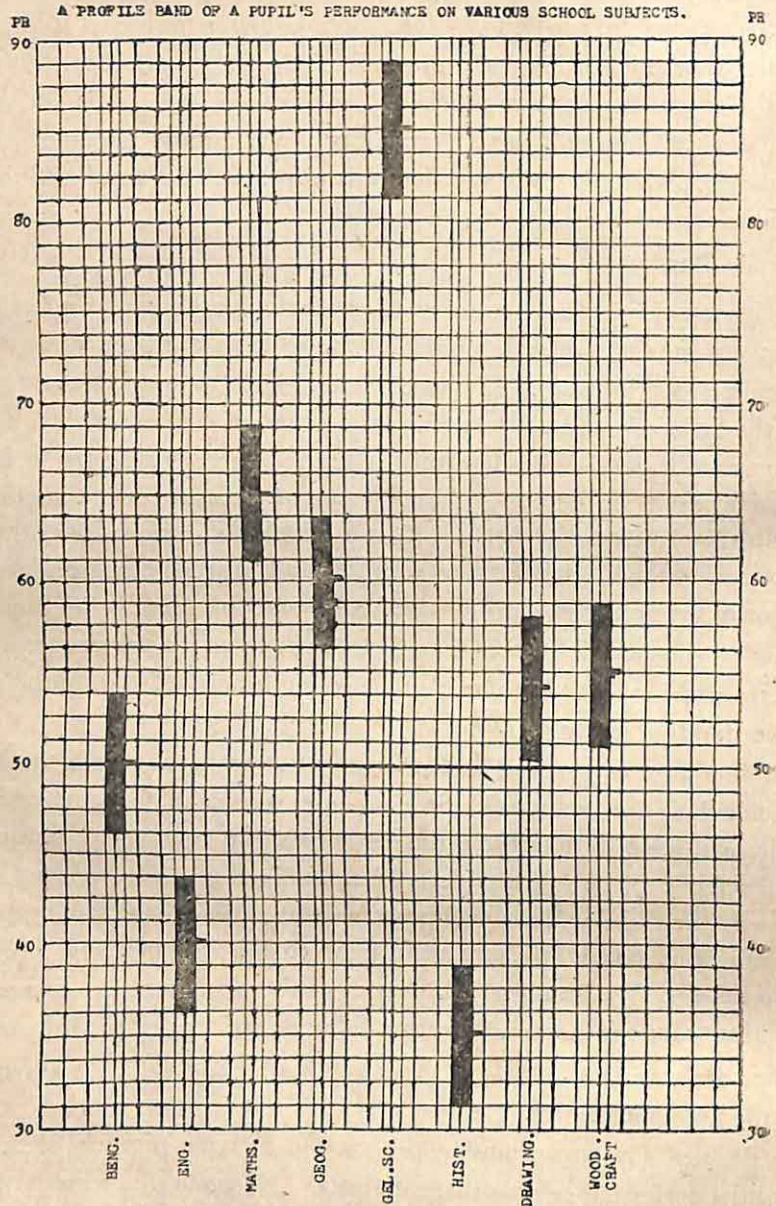
Now-a-days a large number of psychologists do not prefer to plot test scores as specific points on the scale as has been done in the case shown above. They recommended to represent test scores in the form of bands. The standard error of measurement for the test will have to be determined first. These bands are to be drawn by extending one standard error of measurement on the both sides (above and below) of the student's obtained scores. Approximately a pupil's true score will fall within one standard error of his obtained score in two cases out of three. So these bands will enable a scorer to form an idea about the ranges of scores within which the pupil's true score lies and of the pupil's true standing in his group.

Therefore in plotting bands for any test score one will have to calculate the standard error of measurement for the test. One will have to determine the error band in raw score points and refer it to the norm table. If a pupil's obtained raw score is 36 and the standard error of measurement is 2, his error band in raw score points will extend from 34 to 38. By referring these two numbers in the norm table it is possible to determine corresponding range in percentile ranks or standard scores or in any other derived score. How these bands will look like are shown in the following figure.

Profiles drawn in bands will give us a true picture of the pupil's performance on different tests. Effects of inaccuracy in recording test scores will be minimised by this method. It is easier to interpret score bands. If we see that the bands for two tests overlap vertically we can say that there is no significant difference in the performances on those two tests. If they do not overlap we can say that there is significant difference in the performances on those two tests.

PROFILE. II.

A PROFILE BAND OF A PUPIL'S PERFORMANCE ON VARIOUS SCHOOL SUBJECTS.



Precautions to be Undertaken in Interpreting Test Scores

Following precautions will have to be undertaken by a counsellor while interpreting test scores of a pupil in addition to other precautions.

1. "A test score should be interpreted in terms of the specific test from which it was derived." No two tests, whatever may be their names, measure exactly the same thing. There will be some differences between any two tests as regards their aims and objectives. Directions given in the test manual by the test maker will have to be very carefully noted. For example, one Science test may aim to measure a pupil's knowledge of scientific facts and his power of recalling them. Whereas in another Science test the test maker may have given more emphasis on the application and skill side.
2. "A test score should be interpreted in the light of all relevant characteristics of the pupil". A pupil's test performance may be influenced by several internal and external factors, such as pupil's level of intelligence, educational achievements, health condition, cultural background, emotional make-up and by similar other factors. A pupil's poor performance may be the result of improper motivation, non-co-operative attitude, poor cultural background and several other factors. A test administrator should try to ascertain whether the test performance of a pupil fall far short of his potential owing to some unheeded factors.
3. "A test score should be interpreted in terms of the type of decision to be made." A counsellor should understand what abilities a particular test purports to measure and for what purpose the test has been used. A test scorer will have to remember the reasons for using a particular test and the grade of pupils to whom this test has been administered while interpreting test scores.
4. "A test score should be interpreted as a band of scores rather than a specific value". This point has already been discussed while explaining profiles.

5. "A test score should be verified by supplementary evidence". Instead of depending upon one test or one measuring instrument a counsellor should try to study the counsellee through different instruments.

EXERCISE

1. Write short notes on any three of the following :—
 - a. Profiles ;
 - b. Standard Score ;
 - c. Percentile ;
 - d. Percentile Ranks ;
 - e. T-Scores ;
 - f. Raw Score ;
 - g. Derived Score.
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CHAPTER XIV

TESTING PROGRAMME AND GUIDANCE SCHEDULE

Abilities which are Required for successful completion of Different courses of studies And The Tests which are to be used in our Guidance Programme—General Intelligence Tests as Index of Prediction—Achievement Tests as Index of Prediction—Selection of Different Elective subjects in Different Streams.

It is now clear that the most important item of the Guidance programme is "the study of the student". Correct and detailed information about the student should be collected for effective guidance, learning and teaching. It is also known by this time that we can collect information about a student by arranging interviews, by observing, through checklists and anecdotal records and by means of teacher's ratings. In addition to these we can use standardised psychological tests. Standardised tests are frequently and extensively used by the counsellors and teachers for collecting information about students.

Our next question is what tests are to be used in our guidance programme and why. Before giving assistance to a student we should gather correct information about the psychological makeup of the student, that is, the nature of his mental abilities, interests, aptitudes, personality characteristics and scholastic achievements. It will be more helpful if some other factors, such as, motivation, perseverance, study-methods, home environment, economic condition of the family, educational achievement of other members of the family and the student's attitude towards his school, teachers and fellow students are duly considered, in addition to abovementioned psychological factors, before giving him any guidance.

In our country we have introduced seven streams in our Higher Secondary Schools. Different streams demand different types of abilities and attainments. But upto now very few schools have been able to introduce more than three streams. Most of the Higher Secondary Schools have introduced only two streams, viz., Humanities and Science. A small number of schools have introduced three or four streams. Let us consider

some of the courses of studies and the abilities required for successful completion of them.

In the guidance programme at the very beginning we should ascertain whether a particular student is fit to enter into a Higher Secondary School. The next thing is to determine which of the seven streams will be most suitable for him. It is true that different students may possess different potentialities.

It will be better if we determine what abilities or traits are required for successful completion of different courses of studies. Then we will be able to say what standardised tests are to be applied in order to examine whether a particular student possesses those abilities or traits. Our purpose is not to fit a particular student into a particular course but to see which course is suitable for a particular student in respect of his abilities and capacities.

General Intelligence Tests as Index of Prediction

For success in all courses of studies a considerable degree of general intelligence is essential. Intelligence is considered as the foremost and fundamental factor for academic success. Some research workers found significant degree of positive co-efficient of correlation between scores on intelligence tests and examination marks. According to some of them intelligence is the most important single factor which alone can predict future success in academic life. It is true that general intelligence plays a very important role in success in language, mathematics, general science and in social studies. Vernon and Parry¹ also recommended that verbal intelligence tests would help much in predicting future success in school and colleges.

On the otherhand another group of educationists hold the view that the role of general intelligence is not so much important as is thought of. There are other abilities which are equally important. They think that instead of some general intelligence tests it is better to take help of several other tests for measuring different scholastic abilities or factors

1. Vernon and Parry—Personnel Selection in British Forces—University of London Press. 1949.

which are necessary for academic success in addition to general intelligence.

But a large number of psychologists prefer to include general intelligence tests. Therefore there should be provision for some general intelligence tests in the guidance programme.

Achievement Tests as Index of Prediction

A large number of teachers and parents hold the view that the marks obtained by students in school examinations in lower grades may be regarded as a reliable basis for predicting success in high schools and colleges. There is no denying of the fact that achievement test scores have high predictive values. Marks obtained in Primary Schools generally predict the nature of future performance of a student in the High School and the marks obtained in High Schools will similarly predict his performance in college. Several studies have proved that achievement test scores help a counsellor to a large extent in estimating the possibility of a student's success in higher courses. Prediction of student's future success will be more correct if some standardised achievement tests are used in addition to regular school marks. If it is observed that a student gets special interest in a particular subject and shows proficiency in it in earlier stages we can hope that he will do very well in that subject in advanced courses. So we would suggest to include some standardised achievement tests in the guidance programme.

From what has been said so far it is evident that in our guidance programme we should make provision for general intelligence tests and achievement tests on different school subjects. In addition to these tests there should be provision for other tests for ascertaining other factors which have already been stated. Teachers' ratings in regard to suitability of the student for higher education and other factors, such as, motivation, industriousness, study habits etc. should be taken into consideration while guiding a student.

Selection of Different Elective Subjects In Different Streams

Different elective subjects require different types of abilities for success. Now let us try to ascertain the different abilities

which are necessary for success in each of the courses or streams. Different elective subjects have been included in different streams. In all there are more than forty subjects grouped into seven categories or streams. It would be better if we could prepare separate tests for all those subjects. But it is not an easy thing to prepare such a large number of tests. Therefore we will have to remain satisfied with some general tests.

As regards the nature of intelligence tests there are difference of opinions among psychologists. Now-a-days many psychologists think that it is better to prepare different types of intelligence tests consisting of verbal, numerical, spatial and other types of test items. Each type of intelligence test will measure separate intellectual factors which are necessary for success in different streams.

Now let us examine the traits or abilities that are thought of as essential to success in different course-groups and what tests we should use for allocating students to each of the seven streams.

The Science Stream

In the science stream a student is to read at least three subjects out of the following :—(a) Physics, (b) Chemistry, (c) Mathematics, (d) Biology, (e) Elements of Physiology and Hygiene, (f) Mechanics, (g) Elements of Home Science. He is to read English and Mother Language as compulsory subjects in addition to three elective science subjects. In the examination papers he is to express his knowledge in science subjects through language. Therefore a science student should possess a high degree of intelligence and linguistic ability.

It seems reasonable to suppose that for success in science subjects a student must possess the following abilities.

(a) Power of Verbal and Logical reasoning and (b) Mathematical ability.

Power of Verbal and logical reasoning can perhaps be measured by intelligence tests specially prepared for such purpose.

Mathematics is a subject which finds its place in three streams, humanities, science and technical. Similarly Geography finds

its place in three streams,—humanities, science and commerce. Elementary Home Science can be elected in three streams,—humanities, science and fine arts. There are few other subjects like these. But mathematical ability plays a very important role in the science stream. Without proficiency in Mathematics nobody can expect success in the science stream. Even some experienced teachers say that attainment in Mathematics can singly serve as the index of prediction in the science stream. The mathematical ability can be measured by some standardised tests in Mathematics. In addition to standardised tests we can use the marks obtained in Mathematics in school examinations.

In addition to the abovementioned abilities there are other abilities and capacities which a science student should possess for success. These are as follows :—

- (a) An experimental bent,
- (b) Spatial ability,
- (c) Power to generalise and define clearly,
- (d) Power to locate inconsistencies,
- (e) Power to locate fallacies,
- (f) Power to observe accurately,
- (g) Power to collect and arrange experimental data and
- (h) Power to interpret experimental data accurately.

The abovementioned abilities and capacities can be measured by applying scientific ability tests consisting of items designed to measure them.

The school examination marks in English, Mother Language, Mathematics, General Science and Geography should also be taken into consideration in allocating students into the science stream.

The Humanities Stream

The humanities course is generally thought of as the liberal or academic type of education. In this stream there are a few compulsory subjects, such as, English, Mother Language and a Classical Language (e.g. Sanskrit). A student of the humanities stream will have to select at least any two subjects from the following :

(a) History, (b) Geography, (c) Elements of Economics and Civics, (d) Elements of Psychology, (e) Logic, (f) Mathematics and (g) Elements of Home Science.

From an examination of the nature of the subjects included in this branch of studies it will be clear that in order to be successful a student of humanities stream will have to possess high degree of intelligence (including Verbal intelligence and logical reasoning) and linguistic ability (including Vocabulary, spelling, word fluency and power of expression).

Students who will select mathematics or elements of economics and civics will have to possess some amount of mathematical ability.

From the nature of the demands of the subjects of the humanities group it seems reasonable to suggest that in order to estimate a student's potentiality for success in the humanities stream, help of the following tests may be taken.

(a) A general intelligence test consisting mainly items of Verbal type.

(b) Standardised tests in English, Mother-Language and in any other relevant subjects.

In addition to abovementioned tests a counsellor will have to consider also the school examination marks in English, Mother-Language, History, Mathematics, Classical Language and teacher's ratings while allocating students to the humanities stream.

The Technical Course

At present a few Technical Schools and Multipurpose Schools with technical streams have been established in our country, but the authorities of those schools are experiencing great difficulties in selecting capable students. In the U.K. and the U.S.A., selection is made by admission tests which have many parts viz., attainments in academic subjects, teacher's report, results of some psychological tests, parent's opinion, and in some cases personal interview.

In a certain study the present author also found that intelligence, spatial ability, drawing and artistic abilities, creative

ability, practical workshop knowledge, mathematical and scientific abilities as applied to technical work are the qualities required in the technical school course.

Spatial ability refers to one's ability to perceive everything relating to shapes, sizes and the relation of object in space. In a machine-shop it enables a pupil to visualise the composition and interaction of the machine or machine parts. It refers to some power of visual imagination. Some of the tests which claim to measure spatial ability includes a few two-dimensional problems and a few three-dimensional problems. This ability is important in some Technical (course) subjects, such as, engineering drawing, descriptive geometry, architecture, woodwork, mechanics and the preparation of blue-prints.

The artistic ability is revealed in two ways, either through the excellence of the work done by the individual himself or through his superior taste while choosing or interpreting the work of others. These two aspects of this ability are distinguished by some as "Talent for artistic production" and "talent for appreciation."

In his study the present author tried to find out all the necessary qualifications and traits demanded by the technical subjects. He visited several Principals, Headmasters and Teachers of Technical Schools and Colleges and discussed the matter with them. They provided him with all the information regarding technical courses. After a thorough enquiry and long discussions with those Principals and Headmasters a tentative list of qualifications necessary for success in technical courses and engineering vocations was prepared by the author. From such experience it comes that students of the technical stream should possess high degree of intelligence, creative ability, drawing ability, spatial ability, mathematical ability, mechanical aptitude and should show interest in mechanical works.

Qualities required in Draughtsmanship and Engineering courses. (1) Intelligence. (2) Mathematical and Scientific ability as applied to technical work. (3) Spatial ability and Visual Comprehension. (4) Drawing ability, i.e. ability to produce accurate drawings, with special emphasis on accuracy

- of view as well as dimension. (5) Ability to sketch and understand sketches with a certain amount of creative art or ability. (6) Practical workshop knowledge.

Further qualities required by the Executive or Higher level of Engineers and Designers over and above those already mentioned :—

- (1) Administrative ability. (2) An analytical mind. Ability to dissect and build (i.e. analysis and synthesis). (3) Imagination and Creative ability of a superior quality.

It is evident from above discussions that more scientific methods should be adopted for the selection of students for the technical stream. A battery of tests with the following types of tests should be prepared.

1. Intelligence Tests—both verbal and Non-Verbal types.
2. Standardised Mathematics tests.
3. Standardised Mechanical Aptitude tests.
4. Mechanical Information Tests.
5. Some standardised tests for measuring engineering ability, spatial judgment, artistic ability, creative ability and other allied abilities.

School examination marks in mathematics, science, drawing and woodwork should also be considered. In addition to these tests a child's environmental conditions, health, perseverance, alertness, interest and teacher's opinion should be taken into consideration.

The Commerce Course

If we examine the syllabus of the Higher Secondary Commerce course we will see that a student of this stream will have to take any three subjects from the following in addition to English and Mother-Language, which are compulsory subjects.

(a) Elements of Commerce (including Business Method and Correspondence).

(b) Book-keeping and Commercial Arithmetic or Shorthand and Typewriting.

(c) Elements of Civics and Economics and Commercial Geography.

In the Elements of Commerce paper a student is to read trade, transport, banking system, insurance, warehousing, salesmanship and advertisement, stock and commodity rules etc. They will also have to learn how to do business transactions and correspondences. Perhaps high degree of intelligence, logical reasoning, linguistic ability, a good memory span and alertness will be necessary for success in this stream.

In Book-keeping a student will have to learn how to keep Books of Accounts, to maintain a Journal and Ledger, Balancing of Accounts, to prepare Trial Balance, Profit and Loss Accounts, Balance Sheets, the writing of the Cash Book, writing of the Purchase Book and the Sale Book. A Book-keeper should be patient and hardworking man. His handwriting should be clean and beautiful. He will have to perform his work quickly but with accuracy and sincerity. He must obey the rules prescribed for such purposes.

In Commercial Arithmetic he is to work out sums on Percentage, Ratio, Proportion, Commission, Brokerage, Insurance premiums and claims, freight, rates, taxes, discount-trade and cash, profit and loss etc.

In addition to verbal intelligence some amount of Mathematical ability (computational) and good handwriting will perhaps be necessary for success in the Commerce stream. High degree of Mathematical ability may not be necessary for Book-keeping though Commercial Arithmetic portion requires it. Speed and accuracy in checking numbers are also necessary.

For shorthand and typewriting high degree of linguistic ability, correct spelling habit, fair knowledge of grammar, "speed and accuracy in copying", finger-dexterity (quick and free movement of fingers, pencils and papers etc.) and hand and eye co-ordination will be necessary. Power of fixing attention to a matter without any fluctuation is another essential requirement.

Some commerce students may start their own businesses but others will have to accept jobs either in commercial firms or in Government Offices. Those who will accept jobs will either become clerks or officers or high executives. Many psycholo-

gists tried to prepare many psychological tests applicable to the second group of pupils. As an example we can mention here the name of Minnesota Clerical Test. According to some people the following are the "basic requirements" of success in clerical and other less important jobs. 1, 2

"Checking of numbers or names, classification of numbers or names, office filing, sorting of different materials and data, arithmetical computations, spelling, grammar, drafting of business letters and reasoning power, speed and accuracy in work."

Those who will become officers or high executives will have to possess the power of reasoning and abstract thinking to a large-extent.

Those students who intend to start and run their own business should be very capable men because they will have to undertake the responsibility of planning, decision-making and perform all other things themselves.

A few psychologists used clerical aptitude tests in order to predict success in the commercial course.

But it will be more beneficial if some tests can be prepared to measure all the qualities which have been stated above and are regarded as essential to success in the commerce course.

So there should be some intelligence tests (particularly for estimating the powers of reasoning and thinking), standardised mathematics tests, a perceptual speed and accuracy test and a test specially prepared for measuring other abilities.

The school examination marks and the teachers' ratings should also be considered.

Other Courses of Studies

Similarly requirements for success in other courses of studies may also be analysed. But let us remain satisfied with this much for the present.

1. D. Mahanta. Allocation of Pupils in Secondary Education. Kamala Book Depot. Calcutta. 1960.

2. H. E. Garrett. Testing for Teachers. Eurasia Pub. House (P) Ltd. New Delhi. 1959. p. 139.

EXERCISES

1. What information should be collected for offering educational and Vocational Guidance to a boy promoted to class IX of a School with Humanities, Science and Technical streams? How would you collect each type of information? B. T. 1968. C. U.

2. Discuss the Psychological tests (other than personality tests) and achievement tests which need to be administered to pupils, seeking admission to the (a) Science and (b) Humanities streams in Class IX of a Multipurpose School. B. T. 1969. C.U.

3. A pupil reading in class VIII in a multipurpose school has good abilities both in Mathematics as well as in literature. He, however, displays greater interest in literary subjects than in Mathematics. His parents want him to take science course in class IX. What would be your advice as a Career Master? Justify your advice. C.M.C. 1966. W.B.

CHAPTER XV

QUESTIONNAIRES FOR PUPILS AND PARENT ;

Questionnaire for the pupils—Questionnaire for parents.

In addition to the techniques which have so far been described for gathering different information about pupils it is suggested that if a few inventories or questionnaires are prepared for collecting information directly from the pupils and their parents or gaurdians better results will be achieved. As a matter of fact several Guidance Bureaus use questionnaires or record forms which are to be filled up both by the pupils and their parents or guardians for collecting different types of biographical data in addition to the information concerning the potentialities and interests of pupils gathered through standardised tests and personality inventories. These questionnaires should be very cautiously prepared for recording likes and dislikes of pupils as far as possible accurately. The parent's questionnaire should be prepared for recording clearly their wishes and aspirations, financial condition of the family and the types of occupations followed by the other members of the family. In India education has not yet been made free and compulsory. Parents are to bear the burden of educational expenses of their children. They share the joys with their children if the latter are successful in their lives and share also the miseries in case they are unsuccessful. Therefore the wishes of the parents or guardians should always be respected by the Guidance Officers while giving guidance to their pupils.

These questionnaires will reveal several significant facts about the biographical history of the pupils. They will definitely help the guidance officers to sum up various information gathered through different tests and to prepare an objective synthesis of them. There may be some people who will say that the Cumulative Record Cards maintained by schools will be sufficient for synthesising various information. But the Cumulative Record Cards give valuable information about the activities of the pupil when he is in the school. More information about their family life and social life will be required by a

guidance officer. It is better to collect more and more information about the pupil for effective guidance. Again a pupil remains outside the school for the greater portion of the day. A school Cumulative Record Card may not be sufficient enough to maintain all information about a pupil when he remains at home so specially prepared, long and detailed questionnaires for parents and pupils will be of much help to the guidance officers.

Each and every guidance officer will seek for active and wholehearted co-operation of pupils and parents. Both the pupils and parents should have full confidence in the guidance service rendered by the guidance officer or the school counsellor. If they are requested to fill in such questionnaires they will feel that their wishes, likes and dislikes are going to be duly respected by the guidance officer. If they are involved in the guidance programme they will have confidence in the guidance programme. Parents or guardians will extend their hearty co-operation to the school counsellor and in course of time the guidance programme will become popular.

The Bureau of Educational and Psychological Research, Calcutta, has prepared two such questionnaires. One of them is meant for the pupils and the other is for the parents.

Examples of two questionnaires are given below for consideration of school counsellors. (Number of questions may be decreased if found necessary.)

QUESTIONNAIRE FOR THE PUPILS

(*Pupils will themselves fill up this questionnaire.*)

I. GENERAL INFORMATION

Name of the student—

Class— Sec— Roll No— Year—

Name of the School—

Address— Date of birth—

Name of Father—

Name of Guardian— (when necessary)

Occupation of father—

Number of brothers— and sisters—

II. HEALTH KNOWLEDGE.

A. Some of the common Physical Defects.—

- (i) Do you think that you are not keeping a good health ?—
- (ii) Do you feel tired very easily ?—
- (iii) Do you feel aches or pains very frequently ?—
- (iv) Have you head itches ?—
- (v) Do you suffer from ear ache ?—
- (vi) Can you see well ?—
- (vii) Do you occasionally suffer from mouth or gum sore ?—
- (viii) Do you suffer from toothache ?—
- (ix) Can you stand long and continued colds ?—
- (x) Do you suffer from throat or nose trouble ?—
- (xi) Have you got skin itches or burns ?

B. Permanent physical disability.

- (I) Have you any serious or permanent physical disability ?—

III. PERSONAL ADJUSTMENT

- (i) Have you ever been outside your State ?—
- (ii) Do you feel secure at home ?—
- (iii) Do you like your school ?—
- (iv) Are you liked by your school mates ?—
- (v) Do you like your teacher ?—
- (vi) Do you like to obey school rules ?
- (vii) Do you like to be a member of a large group ?—
- (viii) Do you like to act as a leader of a group or you like to act under the guidance of another pupil ?—
- (ix) Do you like funs ?—
- (x) Do you like girls more than boys
(or boys more than girls) ?—
- (xi) Do you suffer from guilty feeling ?
- (xii) Do you see dreams which frighten you ?
- (xiii) Are you afraid of police and ghosts ?

IV. IDENTIFICATION OF INTERESTS AND OTHER ACTIVITIES

(The pupil will have to put check mark or underline some items of interests, activities and occupations which are liked by him)

(a) Academic Preference.

(Any two are to be checked in order of preference and liking).

Literature, History, Mathematics, Science Subjects, Mechanics, Fine Arts, Music, Agriculture, Commerce, Accountancy, Social Studies etc.

(b) Other regular school activities and co-curricular activities liked by the student. (Any three of the items are to be checked in order of preference.)

Drama, Scouting, N. C. C., Organising Exhibitions, Games, Gardening, Painting, Music, Writing of Articles, Writing of Poems, Sewing, Cooking, Social Service, Creative Activities of modern Science, Mechanical work etc.

(c) Pastimes of Pupils

- (i) Do you like to play? —
- (ii) Whether you prefer indoor games or out-door games? —
- (iii) Which play do you like most? —
- (iv) Do you like to read books? —
- (v) What type of books you like to read? —
- (vi) How do you spend your leisure time? —
- (vii) What are your hobbies?

V. STREAM PREFERENCE

Pupil's liking of a particular course of study out of the seven streams available in our Higher Secondary Schools.

A Only one stream should be underlined.

(i) Humanities, (ii) Science, (iii) Commerce, (iv) Technical, (v) Agriculture, (vi) Home Science, (vii) Fine Arts.

B. A pupil will have to name three subjects which he likes most to read in the stream preferred by him. (Only three subjects should be checked),

Here all the subjects taught in every stream should be shown in separate groups under the names of the courses of studies or streams.

VI. OCCUPATIONAL OR VOCATIONAL AIMS

(a) In what occupation the pupil intends to join after finishing his education. (Only two occupations are to be named or marked in order of preference.)

There are thousands of occupations available in our country. It is not possible to name all of them here. Names of some of the most common occupations are given here. If the student likes to take up an occupation the name of which is not given below he may write the name of that occupation. Professional, Salesman, Fishery, Forestry, Foreman, Craftsman, Household Worker, Mining Engineer, Marine Engineering, Farming, Literary Work, Clerical work, Mechanical Work, Scientific work, Teaching, Computational Work, Social Service, Politics, Artistic Work, Musical Work, Business, Service, Administrative job, Doctor, Engineer, Military job in Army, in Navy or in Air Force, Police Department etc.

VII. REASONS FOR SELECTION OF THOSE OCCUPATIONS

The pupil will give reasons for his selection of

(i)

those occupations.

(ii)

(Only two occupations)

VIII. REASON FOR DISLIKING SOME OCCUPATIONS

Which Occupation you

(i)

do not like at all and

why? (Only three

(ii)

occupations are to be

named in graded order.)

(iii)

Place—

Date—

Signature of the pupil.

Signature of the counsellor.

QUESTIONNAIRE FOR PARENTS.

(To be filled up by Parents or Guardians)

I. GENERAL INFORMATION

Name of the School— Date—
 Name of the Pupil—
 Class— Sec— Roll No— Year—
 Name of Father or Guardian—
 Relationship with the Guardian— (if necessary)
 Age of the pupil— yrs— months— days.
 Address—

II. INFORMATION ABOUT THE FAMILY

A. Family Members.—

- (i) Number of family members—
- (ii) Number of brothers— Number of sisters—
 (of the pupil) (of the pupil)
- (iii) Pupil's position amongst the brothers and sisters—
- (iv) Whether it is a joint family—
- (v) Educational level of father or guardian—
- (vi) Educational level of mother—

B. OCCUPATIONAL INFORMATION.

- (i) Is there any family Occupation—
- (ii) Occupation of father or guardian—
- (iii) Occupation of mother, if any—
- (iv) Occupations of brothers, if any—
- (v) Occupations of sisters, if any—
- (vi) Has the pupil any vocational preference—
- (vii) According to your opinion which
 occupations will be suitable for— a—
 the pupil. (Only three occupations b—
 are to be named in order of preference)— c—

C. FINANCIAL CONDITION OF THE FAMILY.

- (i) Is it possible to allow the pupil
 to prosecute his studies for several
 years. (Number of years may be stated)—
- (ii) Is it possible to bear the burden
 of an expensive course of study—

III. INFORMATION ABOUT THE HEALTH OF THE PUPIL

- (i) How is the general health of the pupil—
- (ii) Whether the pupil has any permanent physical disability or physical handicap—
- (iii) Whether the pupil has suffered from any serious illness in recent years—
- (iv) Has he got any trouble with his ear, nose, throat or any other physical organ—
- (v) Is he fatigued very easily—

IV. CHOICE OF EDUCATIONAL STREAM.

(Only one stream is to be checked)

- (i) Into which of the seven streams do you like to put your child.

Humanities/Science/Com-
merce/Technical/Agricul-
ture/Home Science/Fine
Arts.
- (ii) Why do you like to put your child into the particular stream—
- (iii) What stream is preferred by the pupil—

V. SOME MORE INFORMATION ABOUT THE PUPIL

- (a) What are the favourite interests and hobbies of the pupil—
- (b) Has the pupil confidence in self—
- (c) Is he very shy—
- (d) Is he frightened very easily—
- (e) Does he show signs of nervourness even in ordinary situations—
- (f) Can the pupil speak in a pleasant and courteous way—
- (g) Has he consideration for the rights of other people—
- (h) Does he seem to be energetic—
- (i) Can he take initiative in any work—
- (j) Whether he can perform a job with responsibility—
- (k) Whether he seems to be industrious—
- (l) Whether he requires prodding in every work—

- (m) Does he seem to be talkative—
- (n) Is he consistent—
- (o) Does he seem to be reckless—
- (p) Can he perform a job neatly and accurately—
- (q) Does he seem to be honest and truthful—
- (r) Whether he is ambitious—
- (s) Can he come to a definite decision early—

Place—

Date—

Signature of father or Guardian.

CHAPTER XVI

GUIDANCE SCHEDULE

When all relevant data are collected all of them should be summarised most methodically in a specially prepared Summary Sheet or Form for comparison and interpretation. This Summary Sheet (or Form) has been named by many people as the Guidance Schedule. All information about the pupil may be seen in this summary form at a glance. Several raw test scores transformed into Percentile Scores or T-Scores are presented in profile forms in this Guidance Schedule. The Bureau of Educational and Psychological Research, Calcutta, has prepared a Guidance Schedule. A tentative pro-forma of a Guidance Schedule (on the basis of the pattern of the Guidance Schedule prepared by the abovementioned Bureau) is given below.

GUIDANCE SCHEDULE

(To be filled up by the Guidance Officer)

SECTION I. Personal Data—

Name of the Pupil—

Class— Sec— Roll No— Year—

Name of the School—

Address of the School—

Date of birth— Year— Month— Days—

Father or Guardian's name—

Occupation of Father—

Address—

SECTION II. Distribution of Interests, likes and dislikes, choice or desire of the pupil and guardians, co-curricular activities, leisure-time activities or hobbies of the pupil, teacher's estimates to be recorded from school records.

SECTION III. PROFILE OF SCHOOL ACHIEVEMENT

(School Examination Marks)

PR	English Total of 2 papers	Mother Lan- guage. Total of two papers	His- tory	Mathe- matics	General Science	Geo- gra- phy	Dra- wing	Art work	Wood work	Nee- dle work	Mu- sic	Gar- den- ing
100												
95												
90												
85												
80												
75												
70												
65												
60												
55												
50												
45												
40												
35												
30												
25												

(In preparing such a Guidance Schedule the Counsellor will have to make the areas of all the small boxes equal.)

SECTION V. Significant Personality traits of the pupil.

(To be indicated by putting \checkmark marks)

As reported by the Teachers.

(a) Ambitious/Sincere/Hardworking.

(b) Responsible/Honest/Persevering.

(c) Stable minded/fickle minded/ever changing.

As reported by the father or Guardian.

(a) Ambitious/Sincere/Hardworking.

(b) Responsible/Honest/Persevering.

(c) Stable minded/fickle minded/ever changing.

SECTION VI. General Information.

(a) Physical health of the pupil. Very good/good/Average/Not good.

(b) Temperament. Delightful/calm/annoying/harsh.

(c) The Socio-economic condition of the family. Very good/good/Average/Not good.

(d) Environmental condition. Very good/good/Normal/Not good.

SECTION VII. Interview Findings.

(a) The Report of interview with the pupil—

(b) The Report of interview with the parents or the guardians—

SECTION VIII. The stream or course recommended and reasons for such recommendations—

SECTION IX. Remarks by the Counsellor, if any—

Place—

Date—

Signature of the School Counsellor.

How To Fill Up And Interpret A Guidance Schedule

A tentative method for filling up the Guidance Schedule is given below.

SECTION I. This section can be filled up very easily.

SECTION II. The interest profile would be more scientific if some standardised interest inventories could be administered. But as we have no such test at present in our mother-language we will have to draw the interest profile with the information collected through the Pupils' Inventory and the parent's inventory. Here the index marks, such as, P_1 , P_2 , G_1 , G_2 , S_1 and S_2 should be placed in the small boxes drawn under the different headings or courses of studies. While all of them are posted in the small boxes we will get some idea about the likings and aspirations of the pupils, parents and teachers.

SECTION III. In order to fill up this section the Percentile Ranks of all the scores of the pupil in different individual subjects in the school examination at the end of Class VIII are calculated first. The Percentile Ranks are shown by points just in the middle point of the small rectangles. A Counsellor can use ordinary graph paper also. When these points are joined by lines one after another we will get the desired profile. High achievements in which subjects will be predictive of success in which course has already been discussed. A counsellor will examine the peak points i.e. the subjects in which attainments are reasonably high, because they will indicate the course in which the pupil will be successful. Proficiency in a few subjects will be regarded as the index of prediction in a particular course whereas proficiency in another group of school subjects will be regarded as the index of prediction in another course. In this way the probability of success in seven different streams may be estimated.

SECTION IV. This profile will have to be drawn with the scores of the pupil on some Psychological and Objective type of Mental Ability Tests and Aptitude Tests. Here T-Scores of all the raw scores on all tests are to be calculated before entry. Names of some of the probable tests to be applied are shown on the top of the profile to be drawn. Which mental trait or ability would be predictive of success in which stream or course has already been considered. When the profile is drawn the counsellor would examine which traits or abilities are possessed by the pupil. After examining this the counsellor will determine

which course of study will be best suited to an individual student.

SECTION V. No profile for personality traits is to be drawn because personality tests are seldom used by counsellors and a very few prognostic personality tests or inventories have been constructed up to now.

Again Personality tests and inventories are generally used by clinical psychologists for diagnostic purposes. Only the psychiatrists and clinical psychologists know how to administer and interpret personality test scores.

It is not possible for a counsellor to administer personality tests unless he is specially trained for this purpose. Generally the personality test findings are not expressed in quantitative terms. It is not easy to draw a profile if the scores are not expressed in quantitative terms.

Upto now no remarkable research work has been done for determining which personality traits are predictive of success in which course. But many teachers and psychologists consider that a few personality traits are predictive of success in all the streams. Therefore those relevant personality traits have been considered here as an index of future success.

SECTION VI. Entries of the Cumulative Record Card and information collected through the Parent's Inventory and the Pupils' Inventory will enable a counsellor to fill up this column.

SECTION VII. The counsellor will be able to fill up this column after finishing counselling interviews.

SECTION VIII & IX. Will be filled up by the Counsellor very judiciously.

EXERCISES

1. Explain the main contents of the Guidance Schedule and discuss its importance. C. M. C, 1963. W. B.
 2. Write notes on :—The Guidance Schedule—Contents, Collection procedure and interpretation. B. T, 1966. C. U.
 3. What are the major areas of a Guidance Schedule? Why do we include all of them? C. M, C. 1968. W. B.
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CHAPTER XVII.

MEASUREMENT OF ACHIEVEMENT

Achievement Tests—Oral Tests, Assessment of Achievements through Performance, Easy Type Tests and Standardised Objective Type Tests—Usefulness of Standardised Achievement Tests—Limitations of Achievement Tests—The Time when Achievement Tests are to be applied—Intelligence Tests and Achievement Tests—Aptitude Tests and Achievement Tests—Some renowned Achievement Tests.

Educators and parents, all over the world, perhaps without any exception, now-a-days feel that there must be some scientific and reliable instruments for evaluating a pupil's progress in his learning experience or his educational growth. There should be some reliable instruments which will enable a counsellor to select safely the proper type of pupils for higher educational institutions and vocations. Cultural and industrial development of a country depend upon the judicious selection of able, qualified and duly trained manpower for different occupational fields.

Educational administrators are feeling the necessity of some dependable measuring tools for ascertaining how far our educational institutions are approaching to their educational objectives. The need for some Achievement Tests has been felt by all. All educational leaders, social reformers and teachers are trying to prepare good Achievement Tests.

Achievement Tests.

Achievement tests are prepared for measuring, both qualitatively and quantitatively, how far an individual has acquired some knowledge, concepts, techniques and skills as a result of formal instruction. Achievement tests measure a pupil's profit by instruction in reading, spelling, arithmetic, language, history, geography and in several other areas of knowledge combinedly. Objective type of standardised achievement tests may be prepared for measuring a pupil's knowledge in separate subjects. Durost₁ says that achievement tests may be regarded as a "measure of the distance travelled, that is, how much arithmetic

1. W. N. Durost—Why do we test your children. P. I.

has the child learned, how well can he spell, or how effectively does he read ?”

Teachers prepare several informal tests for their own use. These tests may or may not resemble objective type tests. Teachers prepare tests in order to evaluate both periodical and yearly progress in the learning process of their pupils. These tests are named by many people as ‘teacher-made class-room tests.’ Items of such tests are not generally administered to a large sample and are not properly analysed. Again as regards scoring there may be some ambiguity. Many people do not consider these teacher-made class-room tests as objective tests because they are not properly standardised and are liable to be influenced by the personal idiosyncracies of individual teachers. Children of high families may be placed in higher positions which may not be due to them. But according to others, Teacher-made class-room tests are very useful in some cases. It is not possible to do away with such tests whatever may be their merits and demerits.

Teachers and counsellors use following types of tests for measuring achievements of their pupils :—

- (1) Oral Tests.
- (2) Assessment of Achievements through Performance.
- (3) Paper and pencil tests :— (a) Essay Type Tests and
(b) Standardised Objective Type Tests.

1. Oral Tests

In oral tests large number of questions are asked by a person who knows the subject very well. The pupil is to give short replies orally. It is expected that a pupil who knows the subject well will be able to answer the questions correctly. An individual may be highly intelligent and bright but will not be able to answer those questions correctly if he does not know the subject.

2. Assessment of Achievements Through Performance

In some cases pictures of tools and apparatus which are generally used in the occupations are presented to the pupil. The pupil is to solve several problems with those pictures of tools and apparatus.

In some other tests the subject is asked to handle actual tools, apparatus or machines used in a trade. He is asked to do some work with his own hand. He is to produce something with those tools. His speed of work, skill of performing the work and the quality of finished product are all considered in giving him scores. Products of different pupils are graded in order of merit. Industrial psychologists have tried to prepare a scale of norms by applying such tests to a large number of subjects. Very often Typists and Stenographers have to sit for such tests.

Paper and Pencil Tests

(a) Essay Type Tests.

From earlier days teachers are using essay type tests for evaluating pupils' achievements in different school subjects. In essay type tests five or six questions are set. Pupils are to answer those questions by writing essay type answers for each question. Pupils' ability to interpret some data, to understand and organise some ideas, to apply some generalised principles, to make critical estimation and to narrate some facts or events in appropriate language are revealed through the essays written by them. By going through their written answers one can get an idea about their power of expression of thoughts, knowledge of grammar, handwriting, spelling correctness, neatness and many other things.

Limitations of Essay Type Tests.

(1) Five or six questions which are included in any essay type test cannot gauge all the topics of the subject which are taught in the class. Questions are selected only from a few important chapters of the book leaving the major portion of the subject unrepresented. In essay type tests generally questions are not set from more than half of the syllabus. Whereas in objective type tests short questions are set from almost all portions of the syllabus.

(2) In essay type tests an examiner will, knowingly or unknowingly, mark the pupil's handwriting, correctness of spelling, knowledge of language and similar other factors in addition to his knowledge and understanding of the subject. According to Ballard¹ "The man who marks an examination

1. P. B. Ballard. The New Examiner. 1949. p. 354.

paper in Geography is willy-nilly, marking English as well as Geography. He thinks that he is estimating the candidate's knowledge in Geography, whereas he is all the while being unconsciously influenced by extraneous things such as handwriting, neatness, spelling, grammar, correctness of wording, the thousand and one things that go to make a series of written answers."

(3) Different marks will be given to the same answer in the essay type test by different examiners. Even a single examiner will award different marks to the same answer if it is examined by him at different times. Marking is highly influenced by the personal standard, liking and disliking of the examiner. Subjectivity and the mental make up of the examiner play an important role in the marking system. It is really a great problem. These defects of the marking system of the essay type test cannot be very easily removed.

(4) Much time of the pupil is consumed in answering essay type tests. The examiner has also to devote much time in marking them in order to do justice to all examinees.

While making their remarks about the essay type tests the University Education Commission¹ says that "It has usually no clearly defined purpose, it is therefore invalid. Its sampling is very arbitrary and limited : it is inadequate. Its scoring is subjective and therefore not reliable."

School Examination Marks for Assessing Achievement of Pupils.

Parents, teachers and employers generally use school examination marks as a good indicator of a pupil's levels of achievements. As no other instrument is readily available for estimating levels of achievement, school examination marks and teacher's gradings are usually regarded as good criteria for higher education and practical training. This principle may not be free from criticism.

(b) Standardised Achievement Tests as indicators of Achievement.

Large number of experts think that standardised Achievement

1. University Commission Report. Government of India.

ment Tests are the best instruments for measuring a pupil's educational achievement. These tests enable teachers to judge how far the educational objectives have been realised, how far new knowledge has been acquired and whether pupils can apply their acquired knowledge in their life situations.

Achievement tests sometimes serve diagnostic purpose. Very often Achievement Tests are used for determining a pupil's strengths and weaknesses in a particular subject or subjects. The knowledge of strengths and weaknesses helps pupils in making correct choice of courses and in selecting the right type of future training. Guidance Officers are also very much benefited by the knowledge of the strengths and weaknesses of pupils.

Achievement Test scores are very often used by teachers and counsellors for predicting future success in the learning process of pupils. Past accomplishments of pupils are good indicators of their future progress. Good schools generally maintain Cumulative Record Cards properly. Achievement test scores and particulars entered into the Cumulative Record Cards help a counsellor in predicting the type of college or additional practical training where the pupil will be successful in his future life.

Usefulness of Standardised Achievement Tests.

1. They are valid instruments for measuring achievements of pupils. These tests are generally constructed by well-trained persons who know the subject very well. Test items are collected from several text books, different examination papers and other teaching materials. Test items cover the whole syllabus and aim at measuring the objectives of education.

2. Achievement tests are made reliable tests as far as possible.

3. Objective and accurate scoring methods are clearly stated. Very often Test Manuals and Scoring Keys are supplied along with the tests. A definite method of scoring supplied by the test maker will remove subjectivity factors.

4. It is easier to administer Standardised Achievement Tests because necessary directions are given by the test maker.

5. Standardised Achievement Tests are objective tests which have been published after thorough experimentation.

6. In most cases age norms or grade norms are available. These are useful for the interpretation of test scores. It is possible to compare the performance of an individual pupil with the performance of another pupil or the performances of one group of pupils with those of another group.

Some more Specific Uses of Achievement Test Results.

In addition to the purposes which have been stated so far the administrators, teachers and counsellors use achievement test scores for a few more specific purposes.

Administrators use achievement test results for the following specific purposes :—

(a) Administrators use achievement test results for revision of school curriculum and to ascertain whether school objectives are properly realised. If necessary the school curriculum may be revised and improved after examining achievement test results of the pupils.

(b) These results help school authorities to group students of equivalent attainments into a particular class and thereby decrease the range of individual differences of pupils reading in the same class.

(c) Achievement test results help to select instructional methods and if necessary to introduce some remedial programmes too.

(d) They help to understand the individual needs of pupils.

(e) On the basis of achievement test results the school authorities may help parents to get some idea about the strength and weakness of their wards. The knowledge of the level of educational achievement may persuade parents to change their impossible hopes and aspirations.

Teachers Use Achievement Test Results For The Following Specific Purposes :—

(a) Achievement test results help teachers to get an idea about the abilities and capacities of pupils. They can include

particular topics in the school syllabus which will be suitable to the range of abilities and levels of achievements of pupils.

(b) They help teachers to select students for particular activities in the class.

(c) They help teachers to locate the weak spots of pupils and suggest where there is need for drilling and special emphasis.

(d) They help teachers to differentiate under-achievers in the class.

Counsellors use achievement test results for the following purposes :—

The School counsellor is the man who should be in-charge of administration and interpretation of all standardised tests in the school. It may not be possible on the part of a single man to administer tests in all classes alone. He will take help of other teachers of the school to do this job.

(a) Achievement test results enable counsellors to assist their pupils to choose a suitable course.

(b) They enable counsellors to assist their pupils to make appropriate long-term educational and vocational plans.

(c) On the basis of achievement test results the counsellors can help pupils to select, prepare and enter into an occupation where they may expect to be successful.

(d) The counsellor will be able to place his pupils in a position to judge whether they should go to a college for higher education or join some practical training course.

(e) They will help a counsellor to say which student will be suitable for which class when new students come for first admission.

(f) Achievement test results will help the counsellor to discuss about a particular pupil with his class teacher.

(g) Achievement test results supply necessary data for Case Studies.

Limitations of Achievement Tests.

Achievement tests have some limitations also. There are many headmasters and teachers who express doubts about the

effectiveness of standardised achievement tests. They are sceptical about the values of such tests and advise not to give too much emphasis on them. Several other limitations may be stated in the following way :—

1. Total behaviour pattern of pupils are not measured by standardised achievement tests. So they may lead a teacher to form an incorrect impression of a pupil.

2. Teachers very often disregard the directions given by the test maker and misinterpret the test results. So a true picture of the pupil's achievements may not be obtained.

3. These tests generally give emphasis to factual items and ignore items which call for critical thinking and pupil's personal judgment. Therefore, many educational objectives are not measured.

4. In some of the schools teachers do not get enough time to cover all the topics included within the prescribed syllabus. Very often test items are selected from topics which are not included in the text book selected by a particular school. School teachers teach according to the contents of the tests instead of prescribed learning materials. Teachers are tempted to drill their pupils on those factual items from which test items are generally selected. They do not teach the subject matter thoroughly. As a result undesirable study habits are developed by pupils. Pupils try to memorise facts without understanding them.

5. Such a measuring instrument provides little opportunity for understanding the underlying meanings of the topics covered in the class. On the otherhand they encourage dogmatic and uncritical thinking.

6. As students give more emphasis to factual items it is difficult to estimate how far they have organised their knowledge and whether they are able to apply their new knowledge to actual life situations.

7. A disregard of the error factor may vitiate the test results. Sometimes administrators do not pay proper attention to standard error of measurement. Owing to individual differ-

ences and ill training of persons who administer the tests many errors may crop up.

8. Some teachers do not respect the pupil's motivation, likes and dislikes. Parents look to the passing of the test instead of the natural development of the child. As a matter of fact more and more emphasis should be given to a pupil's motivation and to his natural development.

The Time When Achievement Tests Are To Be Applied

Many people ask at what time of the year these tests should be applied, whether at the beginning of the year or at the end of it and whether the test should be applied to a certain group of children or to all ?

When and to whom the tests will be applied will naturally depend upon the purpose for which they are to be applied. If the achievement tests are applied for diagnostic purposes they may be applied at the beginning of the year. On the otherhand if they are applied for general evaluation or predicting purposes they may be applied at the end of the year. There is no fixed rule for their application time. Counsellors and teachers will settle when to apply these tests. It is better to apply achievement tests to all pupils of the class. If a single student comes to the counsellor with a definite purpose achievement tests may be applied to this individual student singly also.

Intelligence Tests And Achievement Tests

It is very difficult to point out a method by which intelligence tests can be differentiated from achievement tests ; because both of them measure knowledge of the content and native abilities to learn. Scores of intelligence tests are influenced by the previous learning of the subject. At the same time it is observed that a subject having a good degree of native abilities generally score very high in achievement tests. Again both of them can equally predict a subject's future school performance. It is seen that a subject who shows good results in the primary school does well in the secondary school also. A subject, whose performance in mathematics in the secondary school is very good, does very well in the subsequent Science Course. Such predictions can be made from the results of intelligence

tests also. Therefore it can be suggested that in order to be more accurate a counsellor should use his achievement test battery in addition to intelligence tests for predicting the future school performance of his pupils.

Aptitude Tests and Achievement Tests

It has been said that Aptitude tests attempt to measure potentials of an individual and are used for making predictions concerning future learning and behaviour. Both of them seem to be same but there are some differences. The distinction between the two types of tests lies in timing, emphasis and purpose.

Aptitude tests measure one's potential for doing something, yet the results are necessarily dependent upon what one has achieved, because ability is always inferred and is never measured directly or absolutely.

Aptitude tests intend to predict what a man will be able to do. It measures potential for learning also. Whereas Achievement tests measure what the individual has learned in the past.

Some Renowned Achievement Tests

A few examples of most renowned achievement tests which are generally used in the elementary schools and in the secondary schools are given below.

1. *The Metropolitan Achievement Tests. (MAT).*

The Metropolitan Achievement Tests were prepared for making a comprehensive survey of educational achievements of pupils in subjects generally taught in schools. There are five test batteries which are applicable to pupils from grade 1 to grade 9. The test battery which is suitable for pupils of Grade 1 and beginning of grade 2 contains sub-tests for measuring skills of reading and arithmetic. This battery is named as Primary Battery I for grade 1 and early part of grade 2. Test items for measuring spelling skills are added after grade 2. The test battery which is applicable to grade 2 and the early part of grade 3 is known as Primary Battery II. Language is added after grade 3. The next battery of tests

which is applicable to grade 3 and 4 and the early part of grade 5 is known as the Elementary Battery. Other two test batteries are known as the Intermediate Battery and the Advanced Battery. The Intermediate Battery is applicable to the pupils of grades 5 and 6 and the early part of grade 7. The Advanced Battery is applicable to the pupils of grades 7 and 8 and to the pupils of grade 9. In the Intermediate and Advanced Batteries there are test items for measuring skills of reading, arithmetic fundamentals, English, Social studies (both History and Geography), spelling and Science.

Several forms of the test battery are available. Metropolitan Test Batteries require about 80 minutes in the lower grades and about 4 hours in the advanced levels. It is not very difficult to administer these tests. These tests can be scored either by hand or by machines.

A test Manual is available. Standard scores, grade equivalents, percentile ranks and stanines are supplied for interpreting derived scores.

All the tests have satisfactory reliability co-efficients. Stated reliability co-efficients vary from .79 (in science tests) to .94 (in word knowledge tests).

2. *Sequential Tests of Educational Progress (STEP)*.

Sequential Tests of Educational Progress (STEP) is a battery of tests. This test battery was prepared by the Co-operative Test Division of the Educational Testing Service, Princeton, N. J. in 1957. The word "Sequential" signifies that the purpose of this battery of tests is to measure a pupil's continuous progress in learning starting from the primary stage to the college stage.

There are seven tests in this battery which are designed to measure a pupil's knowledge in mathematics, natural sciences and social studies. In all seven academic fields are tapped. There are objective tests of reading, writing and listening. There are some essay type tests also. There are written tests for estimating a pupil's ability of writing prose and his ability to express ideas. In listening tests the examiner reads a passage

and the student hears. Then the examiner asks some questions in order to estimate a student's ability of comprehension, interpretation and evaluation. Science tests intend to measure a student's ability to apply his scientific knowledge to different situations. Social Studies Tests intend to estimate a student's ability to understand and appreciate social changes.

Each of the seven tests are printed in separate test booklets. There are two equivalent forms of the test except the essay test which have four forms. This test battery may be scored either by hand or by stencils.

Each of the tests excluding the essay type test requires about 70 minutes' time for administration. The total time required for administration is 5 hours. Percentile norms and grade norms are available. Reliability co-efficients were determined by the Kuder-Richardson Formula 20 and they range from .74 to .95. Test Manuals, profile sheets and the student report are also available.

EXERCISES

1. What are standardised attainment tests? How are they different from teacher-made informal tests? When are the latter more useful than the former? How is the performance of a pupil in a standardised attainment test helpful to a Career Master? C.M.C. 1967. W. B.

2. Indicate how the past academic record of a student is helpful in guidance. Why are standardised achievement tests used in addition to examining the record? C. M. C. 1969. W. B.



CHAPTER XVIII

PERSONALITY AND PERSONALITY TESTS

What do we mean by the term Personality—Assessment of Personality—Anecdotal Records—Rating Scale—Checklist—Questionnaires and Other Personality Inventories—A few Personality Inventories.

What do We Mean by the Term Personality.

A man may perform an act energetically or reluctantly. His behaviour in a particular situation may be pleasing or offensive. The words energetically, reluctantly, pleasing and offensive tell us something about his "qualities of behaviour" or his "Characteristic Style of action". A man's "qualities of behaviour" or his "Characteristic style of action" signifies his personality. Woodworth¹ says that "Personality can be broadly defined as the total quality of an individual's behaviour, as it is revealed in his habits of thought and expression, his attitudes and interests, his manner of acting, and his personal philosophy of life." Instead of using the words "qualities of behaviour" or "Characteristic style of action" many Psychologists use the term "Personality traits". According to Cronbach² "A trait is a tendency to react in a defined way in response to a defined class of stimuli. Traits are familiar in everyday thinking; nearly all the adjectives which apply to people are descriptions of traits: happy, grouchy, conventional, stubborn, and so on." A trait may be a combination of many distinct behaviours. From the behaviour pattern of a man we can come to the conclusion that the man is emotionally stable, realistic, cheerful, sociable and conscientious. But the personality traits of another man may indicate that he is emotionally unstable, evasive and neurotic. Personality traits tell something about a man. The sum of a few traits cannot describe the total personality of a man because in different situations

1. R. S. Woodworth and D. G. Marquis. Psychology. Methuen and Co. Ltd. London, 1949.

2. L. J. Cronbach, Essentials of Psychological Testing. Harper and Brothers. New York, 1949.

"qualities of behaviour" will vary. There are innumerable personality traits and they are stated "in pairs of opposites, such as, dominant-submissive, introversion-extroversion, cheerful-gloomy etc". The temperament of a man, such as, jolly or melancholy, may be regarded as one of his personality traits. Similarly "Character" refers to some ethically accepted behaviour pattern, viz ; honesty, self-sacrifice and truthfulness.

No two persons will possess exactly the same personality traits. Even a single man is not dominant or submissive in all situations. He may be fully dominant when he deals with a powerless man but he will not be so dominant before a very strong man. He will not be similarly submissive in all situations. Personality has dimensions. If the two opposites of a trait are written at the two ends of a straight line different individuals possessing different degrees of the personality trait will occupy different positions in the straight line. This straight line is called by some people as the dimension of personality.

Murphy₁ says that "Personality is not the sum or even the integration of separate traits but is a unitary mode of adjustment in relation to which each specific activity or interest, no matter, how trivial must be seen." He regards a person as an unique individual having qualitative and quantitative differences from another person. Each individual will behave in his own way. His behaviour will be influenced by all his personality traits.

Burt₂ defines personality as "a unified pattern of bodily and mental reactions exhibited by the self in response to a social situation". Here the word "self" perhaps refers to personality.

Munn₃ defines personality as "the most characteristic integration of an individual's structures, modes of behaviour, interests, attitudes, capacities, abilities and aptitudes."

Allport₁ says that "personality is the dynamic organisation

1. G. Murphy. Personality. New York : Harper and Brothers. 1947.
2. Burt, C. L.—The Assessment of Personality—B. Jr. Edn. psychol. XV, 1945.
3. Munn, N. L.—Psychology—Houghton Mifflin, Boston,

within the individual of those psychophysical systems that determine his unique adjustment to his environment." According to him personality is dynamic and not static. Dynamic Organisation of traits influences a man to behave in unique way in his social and environmental adjustment.

Peel₂ says that "the integrated thoughts, actions and feelings of a man describe his personality."

Traxler₃ says that "personality will be defined as the sum total of an individual's behaviour in social situations. Behaviour includes not only overt acts but inward feeling tone produced by the situation as interpreted by the individual through introspection".

If a boy does not steal anything and always deposits to the Headmaster whatever he gets in the school compound we generally call him honest. If he talks or behaves sincerely with others we call him a sincere boy. Here honesty and sincerity may be regarded as his personality traits.

It is generally seen that a student possessing high degree of intelligence and other abilities does very good in achievement tests also. In other words there will be positive correlation between a student's scores on an intelligence test and his achievements in academic subjects. If no positive correlation is noticed between the score on intelligence tests of a fairly intelligent student and his scores on an achievement test we will be led naturally to suspect that some other factors are acting as deviating agents. Some special trait or characteristics of the student's character or temperament or any other factor might have caused such discrepancies. Such traits or characteristics of human beings are generally grouped under a head known as personality. It is said that the term personality includes some mental traits which are different from intelligence.

1. G. W. Allport.—*Personality. A Psychological Interpretation.* Holt and Co. New York. 1937.

2. E. A. Peel. *The Psychological Basis of Education.* Oliver and Boyd. London. p. 225.

3. A. E. Traxler. *Techniques of Guidance.* Harpar and Brothers. New York. 1957.

In the process of Educational and Vocational Guidance it is often observed that some students are incapable of making their choice of courses or careers independently, though they are highly intelligent and possess other abilities. They either overestimate or underestimate themselves for a particular course or career. Their mental make up is such that they cannot come to a decision quickly. It has already been said that in assisting a student in the selection of a career the counsellor will have to take into consideration the student's mental dispositions and many other things, such as, emotions, temperament, ascendance-submission, sociability, introversion, extroversion, attitudes, sentiments and motivational factors in addition to his innate abilities and attainments. Students differ from one another in emotions, sociability, temperament, sentiments, ambitions and interests. Possession of these qualities in different degrees makes a student an unique individual. This "uniqueness" of an individual student may be regarded as his personality. These personality factors influence an individual's adjustment and success in a vocation to a great extent. In many cases of maladjustments and vocational failures it has been noticed that the personality factors act as the reasons of calamities. In cases of vocational failures we should try to assess the nature of the individual client's personality traits and try to diagnose whether he is suffering from any emotional conflict. If it is observed that the client is suffering from some deep seated emotional trouble we shall have to help him in solving his mental conflicts or to get rid of them. It is hoped that if his mental conflicts are solved he will be well adjusted and successful in his vocation.

Many people achieved success in life or in vocations on account of their favourable personality traits though they possessed less innate mental abilities.

We know that different courses of studies and vocations require different mental abilities for success in them. Similarly different courses and vocations require different personality traits for success. It is almost impossible to change or enhance one's mental abilities but his personality traits can be modified

to some extent by proper education and training though they are fairly stable. Many unfavourable personality traits may be transformed into favourable traits by proper education. Even some favourable personality traits may be developed in an individual by teachers and counsellors. For good guidance work a counsellor should try to evaluate his student's personality traits and utilise favourable traits.

Assessment of Personality

Effect of personality development will be reflected in an individual's behaviour. Personality traits include a number of mental traits which are different from mental abilities. There are differences of opinions as regards the origin of personality traits. Some people think that personality traits are to some extent innate or inherited whereas others think that personality traits are results of nurture. A large number of psychologists, however, say that personality traits are noticed just like fixed habits in an individual.

As regards the measurement of personality we are still in the experimental stage. For several years psychologists are trying to measure personality traits and behaviour patterns of individuals. To measure personality traits is an extremely difficult job. There are innumerable personality traits so it is not practicable to evaluate all of them one by one. Guidance Officers are concerned with those traits which are connected with success in studies and vocations. As it is not practicable to measure all the traits separately it is better to place number of personality traits into a few groups and then to prepare tests for these separate groups. In preparing such groups we should see that those personality traits which are necessary for success in a particular course or vocation should be included in the same group. Tests should be prepared to evaluate all the traits of a particular group at a time.

Ordinarily in describing an individual's personality we take help of our general impressions and intuitions about his behaviour. We may describe a man as self-reliant, reliable, polite and honest. But such estimations cannot be considered to be scientifically correct. Our judgment may be hasty,

incomplete and full of prejudices. When a teacher states something about his student his judgment may not be free from halo effect.

The interaction of a person and his present environment will induce him to give some behaviour. Human behaviour is not generally consistent in different environmental conditions and on all occasions. In giving a behaviour a pupil may utilise different amount of his innate ability on different occasions. Behaviour of a pupil is influenced by his feelings, immediate expressions, moods, environment and several other factors. To-day one may be found to be well-adjusted socially but after some time he may be found to be otherwise because of some worries or ill health. So it may not be possible to measure typical behaviour of a person with ordinary paper-and-pencil tests.

A good number of behavioural changes and learning outcomes connected with general knowledge, thinking skills and understanding can be measured with the help of paper-and-pencil tests. Though paper-and-pencil tests play a prominent role in educational measurement some behavioural changes require other types of measuring devices. Again if we want to evaluate a pupil's development in certain skills and his personal-social developmental process we should adopt either or a few of the following procedures.

- (1) Observing his performances and noticing his conversations with others.
- (2) Observing and evaluating the products of his performances.
- (3) Talking with his peers in order to know something about his social relationships with others.
- (4) Asking the pupil to answer some questions directly put to him in order to get some ideas about his likes and dislikes.

These methods are in short known as "Observational techniques", "Peer-appraisals" and "self-report methods."

Different psychologists have spoken of different methods

of measuring personality. Burt₁ has suggested that we can adopt following three methods for assessing personality.

- (1) Interviews. Teachers and other qualified persons will interview students and will grade, rank or rate them.
- (2) Observation.
- (3) Personality Tests.

Vernon₂ has given us a long list of methods for assessing personality. They are as follows :—

- () Interview.
- (2) Performance Tests and Cognitive Tests.
- (3) Situational Tests.
- (4) Self-rating and questionnaires.
- (5) Rating Scales.
- (6) Attitude Tests.
- (7) Interest Inventories.
- (8) Projective Techniques.

Some of the most frequently used tests, inventories, rating scales and questionnaires for assessing personality are described in the next few pages.

Observational Techniques

One of the most popular method of evaluating behaviour is through actual observation. Observation may be done in the following three ways :—

- (1) "in natural situations",
- (2) "in standardised situations", and
- (3) "in projective methods".

Different methods of observation are adopted for different purposes and according to the nature of the problem. In the first method the subject is observed under natural conditions either in the class or in the playground. In the second method observation is made in a preplanned or manipulated situation. This method is generally adopted where an observer wants to compare the behaviour patterns of two or more subjects.

- (1) C.L. Burt—The Assessment of Personality—Br. Jr. of Ed. Psychol. XV, 1945.
- (2) P.E. Vernon—Personality Tests and Assessments. Methuen, Lond.

At the time of observation an observer should be very careful not to disturb or distort the behaviour of the subject. If his presence makes the subject over conscious the observed behaviour will be faked. If the observation is done by "a normal member of the group" then the subject will not be disturbed by the presence of an outsider. When the subjects are very young observation may be made from the other side of an "one-way vision screen". On the whole it will be better if the subject remains unaware of his being observed by somebody. Again the subject should not be allowed to know what characteristics are being observed.

In projective tests the subject is placed in an unstructured situation and is asked to give his opinion of or reaction to some test items. These tests are used to determine a subject's "deeplying behaviour tendencies". Projective tests are very useful for knowing the personality patterns of subjects. Projective tests should be very cautiously applied because young children may not try to conceal anything, whereas matured adults may try to hide many things.

When due precautions are adopted the observation method is very good. But it is a laborious and difficult method. It should be done by an able man and necessary records should be maintained regularly.

Results of observation may become unreliable on account of various reasons. Judgments made after observing an individual may be wrong owing "to sampling errors and observer errors."

Sampling Errors

A subject may behave differently on different occasions from various reasons. Therefore it is better to observe him on several occasions and form a generalised idea about his behaviour after several observations.

Again it is very difficult on the part of a single observer to place two individuals in identical situations and to observe both of them at the same time. Here also if several observations are made by changing the environmental conditions for several times good results may be obtained.

Observers' Errors

Observers themselves have their own likings and dislikings. One observer may be very liberal but another observer may be very strict. A particular observer may think that a particular type of behaviour should be highly appreciated whereas the same behaviour may be regarded as the most objectionable or of less value by another observer. When observation is made by a foreman of a factory he may award high scores to a worker who is liked by him. Another worker who is not liked by the foreman may be given a lower position even if he also gives same type of behaviour in an identical situation.

If two observers are requested to observe identical scenes and are requested to submit their reports independently their reports will perhaps differ widely. This may be due to the individual differences and personal biases of the observers. Several observers may be appointed and an average of all the observation reports may help us in coming to a decision. Again each observer should observe in two sessions. The items to be observed should be very clearly explained to the observers beforehand. A specially prepared pro-forma, indicating several vital points, should be supplied to all observers for preparing their observation reports. A reasonable period of time should be allowed to each observer to observe a subject.

Other Methods for Reducing Errors of Observation

Following precautions may reduce errors :—

“1. Time Sampling and 2. Photographic and Phonographic Recording.”

If human observers are replaced by mechanical recording instruments the errors of observation will be much reduced. For this purpose we can use photographic cameras, tape recoders and wire recorders. With these mechanical devices we can keep records of activities of many children giving behaviours at a time. In a photo film or in a sound recorder we can keep a record of a good number of events happening simultaneously. Again if we use a motion-picture camera or a tape recorder we can keep records of events for so long as we want. They can be replayed before a large number of expert observers for final analysis and judgment.

Now let us discuss some of the most commonly used observational techniques, viz., Anecdotal Records, Rating Scales and Check List.

Anecdotal Records

A teacher is in a privileged position to observe a pupil for a long time in a natural situation and to gather valuable information regarding the pupil's learning and developmental process. He can observe many daily events and incidents, occurring in various situations, which help him to form some definite idea about the performances and behaviour of the pupil. His judgment should be as far as as possible objective.

The teacher will have to keep an accurate record of all the facts observed by him otherwise his impressions will be distorted. The most convenient method of keeping records is the maintenance of anecdotal records. Anecdotal record refers to recording of anecdotes or happenings, which involve the pupil just at the time of happening or later on, by an observer. Factual descriptions of all the observed and significant events and incidents, which have taken place in the life of a pupil, should be recorded by the teacher in the Anecdotal Record Card. Descriptions of separate incidents should be recorded in separate record cards. Different cards should be used for different pupils. Separate cards will be helpful at the time of interpretation of behavioural changes in different situations. Anecdotal Record Cards may be prepared by a teacher according to his own needs. Following proforma may be adopted if found suitable.

ANECDOTAL RECORD FORM

Year—

Name of the School—

Class—

Name of the Student—

Date—

Place where the student was observed—

Name of the observer or the Teacher—

INCIDENT

Clear description of the incident.

INTERPRETATION

Interpretation of the meaning of the behaviour.

Signature of the Teacher.

Advantages of Anecdotal Records

Anecdotal records serve us in various ways. As all incidents and events are recorded in the form of writing there will be less chances of forgetting or faulty recall. It will act as a guard against the tendency to remember only some good events or some bad events in cases of pupils who are liked or disliked by the teacher. Anecdotal records may be kept as a part of the Cumulative Record Card.

Anecdotal records contain a detailed description of actual behaviours of pupils in natural situations. It will reveal many true facts about persons observed. In our classes we teach many things about truthfulness and honesty. When observed by a teacher some pupils may be found to tell lies very often or destroy school properties. If all these facts are recorded in anecdotal records the teacher may think of changing his method of teaching and try to help his pupils to change their attitudes towards school properties. One may possess fair knowledge of health and hygiene but does not wash his hands and brush his teeth regularly. Such things may be noticed in anecdotal records.

Some exceptional but meaningful events are often recorded in anecdotal records. It may happen that a pupil who is apathetic to his studies shows a spark of interest in Mathematics. Anecdotal records make the teacher aware of these behaviours. This kind of behaviour may not be evaluated by other techniques.

Young children are generally very frank and do not fake their overt behaviours. When they behave they behave spontaneously and in an uninhibited way. So it is very easy to prepare anecdotal records of very young children. It is also easy to keep anecdotal records for retarded pupils. Anecdotal records are particularly advantageous to very young and abnormal children because they are generally unable to give responses to other types of objective tests such as paper and pencil tests, peer appraisals and self-report techniques etc.

When a teacher is required to submit a report about a pupil to his parents the anecdotal records serve the teacher as a very handy tool. As all the "typical and characteristic happenings" are recorded in writing in the anecdotal records the teacher can

discuss those points one after another with parents. When the teacher participates in staff conferences or meets the school psychologist he may discuss the points recorded in anecdotal records.

Young pupils try to imitate their teachers. Most of the pupils accept the sayings of their teacher as axiomatic truth. So some ideas about the activities of the teacher and his personal biases are also reflected in the anecdotal records of pupils. This will surely help a teacher to correct some of his own defects.

Limitations of Anecdotal Records

It is a time consuming task. A particular pupil will have to be observed for a long period of time before filling up the Anecdotal Record Card. Again different cards will have to be used for recording different events. For getting a more reliable picture several teachers may be asked to observe a pupil and prepare anecdotal record cards separately. Finally all of them are to meet together and form a conclusion after some discussion.

The next difficulty is to make the anecdotal record an objective one because the teacher is to observe and record his impressions at the very moment when the pupil actually behaves. It is easy to deliver a lecture but when it is to be reported in writing the task becomes a difficult one. Again the teacher is a human being and he has own biases, interests, hopes and idiosyncracies. He may accept all behaviours of his pupils who are liked by him as desirable. Here also more than one teacher should prepare separate anecdotal records and an average of all those records may be taken into consideration. Teachers should undertake proper training before making observation and preparation for anecdotal records.

How to Improve Anecdotal Records

There are several factors which may make an anecdotal record unreliable. So some psychologists have suggested the following precautionary measures to be taken for making observation and reporting more effective.

(1) "Determine in advance what to observe, but be alert for unusual behaviour." There are some behaviours which can

be evaluated by paper-and-pencil tests or by other standardised psychological tests. So we are to determine at the very beginning what kind of behaviours cannot be measured by the existing paper-and-pencil tests and are to be evaluated by observation. Again some special events and incidents which are of great value in a pupil's developmental process may be overlooked. In evaluating such unusual but significant behaviours we should use observation method.

(2) "Observe and record enough of the situation to make the behaviour meaningful." Sometime it becomes difficult on the part of a teacher to interpret a particular behaviour of a child without knowing the background of the situation under which the pupil gave that behaviour. It may so happen that a pupil gives some unnatural and aggressive behaviour. On enquiry it may transpire that the pupil was unnecessarily provoked by his classmates for no fault of his. In this occasion he cannot be described as an aggressive pupil. So in the actual recordings there should be full description of the situational conditions which have caused such behaviour.

(3) Prepare the records of incidents either at the time of observation or as early as possible just after observation.

(4) One event or incident should be observed at a time. Another incident or another pupil should be observed after completing the records of this observation.

(5) Description of factors observed and the observer's interpretations should be recorded in separate places. Interpretations should be written in a clear language. Terms like hostile, shy, unhappy, lazy and uncongenial should be avoided as far as possible. If such words are used at all they should be written in a separate place.

(6) "Both positive and negative behavioural incidents" should be recorded clearly in the anecdotal records.

(7) A pupil may behave differently in different situations for various reasons. It is better to observe several behavioural incidents for the clear understanding of the behaviour pattern of a particular pupil.

(8) A new teacher may feel difficulty in selecting incidents which he should observe. Again he feels embarrassed when he is to prepare his records in an objective way. Therefore a teacher who intends to do this job should undertake special training from some training Institute or receive proper direction from some expert and experienced teacher.

Rating Scale

Rating Scale is a more systematic method of observing and recording the judgments of observers. It records the degree in which a set of characteristics or a particular attribute is possessed by an individual. Rating Scales also deal with qualities and behaviour traits which are not easily evaluated by ordinary objective tests. In this system an observer observes in what degree a particular attribute is present in an individual and expresses his opinion by placing the individual in any place along a graded scale or into a particular group of people. He uses a rating form for reporting his judgment. This graded scale prepared on a rating form is generally known as the Rating Scale. Teachers and Vocational Counsellors very often use Rating Scales while giving Educational and Vocational guidance. Employers use Rating Scales for selecting suitable candidates. Teachers very often prepare Rating Scales for comparing a large number of pupils possessing the same set of characteristics, and also for rating them in a graded way.

Different Types of Rating Scales

There are different types of Rating Scales. A few of them are described below :—

1. Numerical Rating Scale.

In the Numerical type of Rating Scale numbers from 1 to 5 or 1 to 7 are written horizontally in order to indicate the different positions of a sliding-scale. The rater is to underline or put a circle around the number to which he wants to assign the individual to be rated. The number around which the circle is drawn will indicate the degree in which the characteristics are present in the individual. A

verbal description is given arbitrarily to each number at the very beginning.

Example :

Directions are given in the following way :

Rate a pupil A in order to show the degree to which the attribute attentiveness is present in the pupil. Put a circle around the appropriate number which you want to award to the pupil. The numbers are given the following values :—1.—Never, 2.—Seldom, 3.—Occasionally, 4.—Frequently and 5.—Always.

Q. (a) To what extent does the pupil sustain his attention in the class ?

1 2 3 4 5

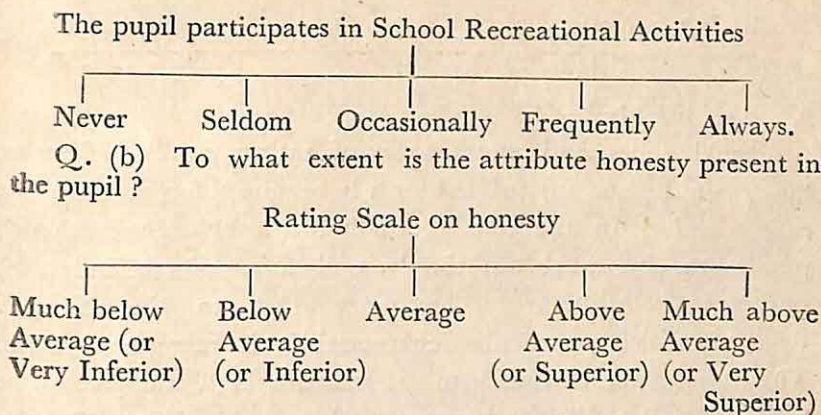
2. Graphic Rating Scale.

The next type of Rating Scale is known as the Graphic Rating Scale. In this type of rating scale the name of the characteristic in which the pupil is to be rated is written on the top of a horizontal line. The horizontal line is divided into five or seven equal parts. Each point of division is shown distinctly. Just below the horizontal line are written the names of the categories into which the scale is divided. The rater checks or circles the category to which he intends to assign the pupil. In special or exceptional cases the rater is free to put a check in between any two points.

Example : A five-point Graphic Rating Scale.

Directions : Rate a pupil A in order to show the degree in which the characteristic is present in the pupil. Put a check (✓) mark anywhere along the horizontal line showing the category in which you like to place the pupil.

Q. (a) To what extent does the pupil participate in recreational activities ?



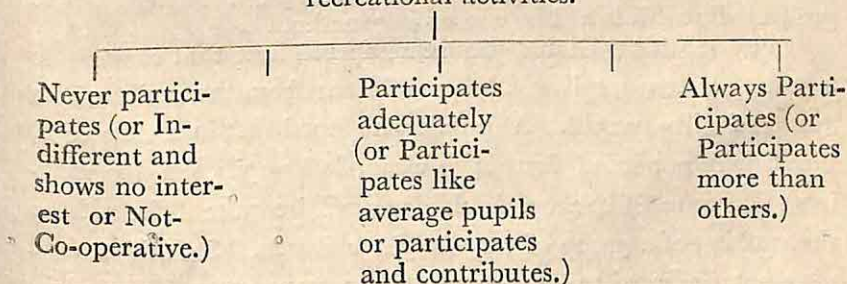
When the same set of categories (e.g. Very Inferior, Inferior, Average, Superior and Very Superior) are always used in the horizontal scale to include the different aspects or degrees of a particular group of characteristics it may be called a "Constant-alternatives scale". When these categories are named differently in different places the scale may be named as "a changing-alternatives scale". A characteristic may be divided into several categories according to needs but they should be clearly differentiated.

3. Descriptive Graphic Rating Scale

In a Descriptive Graphic Rating Scale "a descriptive phrase is placed beneath each designated point". Here also the different degrees of behavioural patterns are divided into several categories and are written at different designated points in the horizontal scale. In some Descriptive Graphic Rating Scales only the two end positions and the centre are described. Generally several spaces are provided in this rating scale for comments of raters. This type of rating scale is preferred by many school teachers.

EXAMPLE :—

A. (i) To what extent does the pupil participate in school recreational activities.



(ii) Comments.

4. Ranking Method.

Ranking method is another way of rating pupils. Here no horizontal line or any printed form is required for showing the rating scale. In the ranking method ("rank-order method") pupils to be rated are simply ranked or placed into rank positions from high to low, according to the estimated degree in which a particular characteristic is present in them. The pupil who is found to possess the highest degree of the attribute is placed at the topmost position and the pupil who possesses the lowest degree of the attribute is given the last place. Then all other students are placed in their respective rank positions. As soon as all the pupils are ranked the intermediate rank positions will also be filled up. It is probable that more than one pupil will occupy a particular rank position. But it will be better if all the pupils are differentiated from one another. It can be very easily realised that ranking becomes a very difficult job when the number of pupils to be ranked is very large.

Where the number of pupils to be ranked is very large it is convenient to divide pupils into some small groups with equal number of pupils in each group and then begin the ranking work. This division of pupils into different groups should be done "on the basis of over-all quality". This first step of the ranking process may be regarded as the preliminary grading.

After preliminary grading pupils are ranked individually within their respective small groups.

There are some people who prefer the "paired-comparison method". In the "paired-comparison method" each pupil will have to be compared with every other pupil of the whole group. But this is a time consuming method.

But one thing should be remembered here that ranking in a group of ten pupils will be different from the ranking in a group of fifty pupils. A pupil who stood first in a class of 10 pupils may not stand first in a class of 40 pupils. Again ranking of a group of backward children will be quite different from the ranking of a group of very bright children. So this method may not be found to be very reliable in many cases.

Uses of Rating Scales

We have already seen that rating scales can be used in judging and rating different qualities of our pupils. Generally the rating scales are used for evaluating or rating the following aspects of a child's development.

- (1) "procedure" adopted by him while doing some work,
- (2) "product" of some work done by him, and
- (3) many other aspects of his "personal-social development".

"Procedure"

Rating scales may be used to rate pupils on the basis of the procedures followed by them while performing some work instead of judging their product. In some cases credit is given to a pupil who performs some job in a very good method. We meet such cases when we are to rate some pupils after observing how each of them handles his laboratory equipment or how he plays a musical instrument in their music class. In such cases we cannot evaluate the abilities of the pupils with the help of paper-and-pencil tests. For evaluating procedures adopted by a pupil in performing a job a rating scale is very helpful.

Again a rating scale sometimes serves as a good teaching device. Suppose a group of pupils are rated in a five-point scale on the basis of some learning outcomes and the method of rating is explained to them. Now the pupils will understand what is wanted of them and they will naturally change their performance procedures in order to get better ranking.

"Product"

When a pupil's performance yields some concrete products the teacher will naturally evaluate the product instead of the actual procedure followed by the pupil. Suppose a boy is asked to write an essay on the cow. The teacher will not perhaps judge how the pupil writes but he will examine the quality of the essay itself when finished. He may not observe the pupil while writing the essay or take into consideration the procedure of actual writing in the process of evaluation.

In some cases, however, as in the cooking class, woodcraft class or in a smithy class a teacher may rate his pupils on

the basis of procedures followed by them, in the early part. But during the latter part he will have to rate them on the basis of the quality of products.

It often becomes necessary to evaluate the product of a pupil "in terms of its over-all quality." In such cases we take the help of a "product scale." When a large number of samples of products of pupils are very carefully judged and ranked in order of graded degrees of quality it becomes a product scale of some ability. Product scales help us in evaluating handwriting, drawing etc. of our pupils. If we want to evaluate a pupil's handwriting, we are to move the sample of the pupil's handwriting along the "handwriting product scale" until it matches with any one sample in the scale. This particular pupil's handwriting will get the value of the sample of handwriting (i. e. rank position) in the scale with which it is matched.

"Personal-social Development"

Rating scales are very useful in evaluating "personal-social development" of our pupils. Teachers are very often required to state the degree in which the attributes, such as, initiative, personal effort, co-operation, class room discipline, honesty and emotional stability are present in a particular pupil. For rating his pupils on such attributes a teacher will have to take the help of rating scales because other types of evaluating instruments will not help him much.

In rating pupils on the basis of "personal-social development", observations and assessments are to be made for a considerable period of time. In this type of rating scales ratings are made at periodic intervals whereas in "Procedure and product rating scales" ratings are made either during observation or immediately after observation. But owing to elapse of time the ratings in "personal-social development rating scales" may be influenced by teachers' biases and feelings. There are only a few such rating scales. Haggerty-Olson-Wichman Behaviour Rating Schedule is a good example of such rating scale.

Some factors which may cause errors in Rating

Rating Scales occasionally suffer from a few types of errors. These errors may be caused by the following factors.

- (a) "Personal bias."

(b) "halo effect."

(c) "Logical error."

(a) *Errors due to personal biases of the rater*

There is a tendency among some raters to use a particular place on the scale too frequently. There are some over cautious raters who avoid the two extremities of the rating scale, as far as possible, and assign to every one average ratings. This has been named by many as the "Central tendency error" or as the "Caution factor." There is another group of raters who prefer the high end of the scales and assign large number of high ratings. This kind of probable error may be called the "generosity error." There is still another group of raters who are very strict and are not easily satisfied. This group of raters always roam about the lower end of the scale and award too many much below average ratings. This kind of error may be named as the "Severity error." Ratings made by such raters are not very reliable. Ratings made by different raters will surely indicate the nature of the raters also.

(b) *Errors due to halo effect*

If a rater likes a pupil much he will rate that pupil high in all traits but if the rater dislikes a pupil he will always rate that pupil low in all traits. Again there may be a tendency to rate a pupil high in all other traits if he gets high rating in any trait on a previous occasion. This kind of error committed by a rater may be caused by halo effect. If ratings received by pupils on different traits are influenced by halo effect it will be difficult on the part of teachers or counsellors to get clear ideas about the strengths and weaknesses of their pupils on various traits.

(c) *Influence of logical errors.*

Some raters are of the opinion that there are some logical relationships amongst some traits. They maintain some fixed notions about human nature. Most teachers think that pupils having high degree of intelligence will have good work habits or will attain high academic achievements in the Science stream. It is taken for granted that there is logical relationship between intelligence and high academic achievements. So there will be

a tendency to overrate a particular pupil on both the traits. Again some raters hold the false notion that gifted pupils have poor skills for social relations. As a result a gifted pupil may be underrated in the social adjustment trait. If ratings are done with such preconceived ideas they are likely to be unreliable. Such errors are named as logical errors.

How to remove errors and to make effective the Rating Scales

There are some requirements of a reliable rating scale. We have already mentioned how mistakes are committed in rating pupils. So proper precautions should be taken to avoid those probable sources of errors. The most commonly used rating scale is the Descriptive Graphic Rating Scale. In constructing a rating scale due attention should be given to the following important points.

(1) Characteristics to be rated should be educationally significant. When constructing a rating scale teachers should select those characteristics which are essential to evaluating learning outcomes of pupils and are not easily measurable by other evaluating instruments. They should be sure that their selected characteristics can be better evaluated by rating scales.

(2) Characteristics which can be directly observed in behaviours are to be rated. Teachers should observe their pupils in school situations for a considerable period of time before rating them. Some of the characteristics such as work habits, participation in the class room discussions, and skill to undertake some project intelligently can be readily observed from overt behaviours and they can be rated. But there are some behaviours such as attitude towards the Church and "interest in opposite sex" cannot be directly observed and some inferences are to be drawn from some outward signs.

(3) Traits and points on the scale should be carefully defined as far as possible. Before the preparation of a rating scale the characteristic to be rated and the scale points should be clearly settled. An hodgepodge of many traits will confuse a rater. Again if the categories into which the rating scale has been divided are not clear the raters will feel much difficulty in assigning rating categories to pupils. This difficulty can be

avoided to a large extent by preparing a descriptive rating scale because in such a scale the meanings of the points of the rating scale are a bit clearly defined. In this type of rating scale the characteristic to be rated is a bit clearly explained.

(4) "The number of divisions on the scale should be neither too numerous nor too few". There are some psychologists who hold the view that there should be three to seven rating points in ordinary rating scales and raters should be permitted to mark at intermediate points. Generally we use five-point or seven-point scales. But the exact number of points into which a rating scale is to be divided will depend upon the nature of the characteristic and the nature of the judgment. For a very crude estimation fewer scale points may serve the purpose. It should be remembered that if we divide a rating scale into fewer scale points we will not be able to rate accurately. Again if there are too many scale points a large portion of the scale will remain unused except where very finer discriminations are wanted. These are the reasons why five-point scales have become so popular. It is needless to go beyond a seven-point scale.

(5) Raters should be given explicit and clear directions :

(a) They should be asked not to rate where they feel that they are not qualified to judge. Such cases may occur where the pupils are quite unknown to raters or where there is "insufficient opportunity to observe" the characteristic.

(b) "The raters should be told what is meant by the distribution of a trait".

(c) They should be asked not to award "average" ratings lavishly.

(d) The raters should be warned against trying to avoid the halo effect. In order to achieve this goal they are to be reminded that the distribution of their rating scores should follow the normal distribution curve as far as possible. If the base line of a normal distribution curve is divided into five equal parts, the probable percentage in each part will be 7, 24, 38, 24 and 7 respectively. Again if the base line is divided into seven parts, the percentage in each part will be 4, 10, 22, 28, 22, 10 and 4 respectively.

(6) Rating made by a single rater may be influenced by his personal bias and may not be so reliable. Some psychologists have recommended that ratings made by several raters should be combined together because such a pooled rating will give a more reliable picture of a pupil's behaviours.

CHECK LIST

Both in appearance and use checklists resemble the rating scales. They differ fundamentally in the process of judgments made. In the rating scale a rater is to say to what degree a particular characteristic is present in the subject but in a checklist an examiner is to give his judgment by saying yes or no. A checklist will show whether a particular characteristic is present or absent in the subject or whether an action was done or not done by him. But when we want to report the degree or frequency of occurrence of a behaviour we should use a rating scale.

Checklists can be used for recording performance skills when those skills can be divided into several clear cut actions. A checklist consists of a long list of actions or behaviours which are expected to be undertaken by the subject when he performs a job. In order to prepare a Checklist for evaluating a performance one will have to determine and describe all the desired steps or specific actions which a subject may have to undertake. Side by side a list of common or likely errors which may occur should also be prepared. The examiner is to give several marks to all the actions or behaviours of the subject as they appear one after another. This will indicate the sequence of actions. In some item he will have to give a tick mark (✓) if he notices that particular behaviour. The examiner will have to observe the subject all the time and prepare his records simultaneously.

A checklist can be used for evaluating products, personal-social development and procedure also. But in cases like social adjustment and personality assessment it is not safe to use a checklist. When we want to evaluate a student's social maturity, emotional stability and initiative etc. a checklist is least helpful because in these cases simply saying that these traits are

present or absent is not sufficient. In these cases one will want to know the degree in which they are present or absent.

Questionnaires and other Personality Inventories

Woodworth₁ says that "In general a questionnaire is a list of questions to be answered in writing or by checking 'Yes' or 'No'." Questionnaires are used by psychologists and others for getting various information regarding a man or any other matter. Psychologists use questionnaires for knowing a person's different personality characteristics or traits. An inventory or a questionnaire consists of a large number of questions which are expected to reveal some personality characteristics of an individual. An inventory or a questionnaire may be regarded as a "standardised interview" or a "self-report" because here the pupil is to express his ideas, opinions, feelings, likes and dislikes. The pupil is not required to solve a problem as in ordinary mental tests.

Different types of questionnaires have been prepared by psychologists to evaluate the following traits or dimensions of human beings.

1. "Personal-social behaviour" (Personality Questionnaires).
2. "Attitudes" (Attitude Scales).
3. "Interests" (Various Interest Inventories and Interest Blanks).

A psychologist who wants to determine a typical behaviour of a pupil but does not get opportunity to observe him sufficiently may have to depend upon such inventories and questionnaires. Inventories and questionnaires depend to a great extent on the pupil's "insight into himself."

Personality inventories are concerned either with adjustment areas, such as, social factors, emotional factors, health, motives and needs of human beings or with other personality traits, such as, sociability, lack of self-confidence, feelings of insecurity and so on.

- (1) R.S. Woodworth & D.G. Marquis-Psychology. Methuen & Co. Ltd. Lond.-1949 p. 102.

Attitude scales or inventories are concerned with a pupil's favourable or unfavourable "feelings, opinions and beliefs" "toward some person, group, object, institution, or idea".

Interest Blanks or questionnaires deal with a pupil's likes and dislikes. Interest inventories reveal what subjects, books, occupations, sports etc. are preferred and what objects, ideas, subjects, occupations are not preferred by the pupil.

The Personality Inventories.

The first renowned personality inventory or questionnaire was published by Woodworth and is known as Woodworth's Personal Data Sheet (or PD). In Woodworth's Personal Data Sheet were included some questions which were considered as most significant by psychologists for diagnosing symptoms of "nervous breakdown" or "Psychoneurosis" etc. It is said that "a personality questionnaire is a standardised interview." When a large number of people are to be recruited within a very short time or it is impossible to interview all the candidates within the stipulated time, it is desirable to use questionnaires. Woodworth's Personal Data Sheet was extensively used during the World War I in order to screen out the recruits who were maladjusted or would be mentally ill subsequently. As such inventories were found very useful at that time and many psychologists prepared many personality inventories. Many of them adopted ideas of Woodworth. Different inventories were prepared to evaluate different aspects of personality.

By 1940 many of the personality inventories lost their popularity but their importance was again felt during the World War II. Industries also began to use these inventories for selecting their future employees.

The Military Department of the U.S.A. use personality inventories very frequently for screening out misfits. The Carnell Selectee Index and the Shipley Personal Inventory are very widely used by the Military Department.

In course of time most of these adult questionnaires were revised in order to make them suitable for school children. In these questionnaires, which were made suitable for children,

some of the questions which were considered to be serious, disturbing, immoral and connected with sex offenses were deleted. Most of the personality inventories attempted to estimate personality traits like "neurotic tendency, introversion-extroversion, and dominance."

"Personality and mental hygiene" are regarded as two very important aspects of human life. When psychologists come across a maladjusted child they often try to know whether the parents and teachers of the child are emotionally balanced. A maladjusted father or a maladjusted teacher may be the cause of maladjustment of children. Even in some cases of chronic diseases a doctor tries to ascertain whether some psychological element may be there at the root of the illness.

Almost all personality questionnaires intend to find out some traits. By the term trait we generally mean a tendency to give a particular type of overt behaviour in response to a particular type of stimuli. All the traits of human beings are expressed by adjectives, such as, stubborn, kind, grouchy, happy etc. According to some psychologist a trait is a conglomeration of many "specific behaviours."

It is rather difficult to identify the special traits of a normal person than of an abnormal person with a personality inventory. Generally the traits of an abnormal person show distinct syndromes or personality patterns and deviate from the normal distribution. So it is easier to identify abnormals with personality inventories.

From his factorial analysis, Cattell₁ could identify 12 personality traits. Guilford₂ also carried some researches with personality traits. He could not identify some definitely independent traits. Thurstone who carried on further studies with Guilford's list says that there are seven primary traits, such as, "reflective,

(1) Cattell R.B. —The Measurement of Personality, Yonkers. World Book Co. 1947.

(2) Thurstone L.L. : The dimensions of temperament, Report No. 42, The Psychometric Laboratory. Chicago : University of Chicago Press. 1947.

friendly, masculine, emotionally stable, active, ascendant and impulsive.”

Questions in a personality inventory may be put in the direct or in the indirect form. Different personality inventories are scored in different ways. Generally two methods of scoring are used. In one method separate scores are given for each adjustment area or for a definite personality trait, such as, self-confidence, emotional stability, sociability etc. This method of scoring is known as the “separate score” method. In the other method a total score is given for all the adjustment areas, i.e. for all the personality traits jointly. This method of scoring is known as the total score method. The validity of the separate scoring method has been questioned by many research scholars.

There are some limitations of personality inventories.

(1) Subjects may give faked responses. Unless they are properly motivated they may not give true or correct responses. Some of the inventories have “Control Keys” and some have adopted “forcedchoice” type of questions in order to avoid faking. Questions should be very carefully framed and threatening questions should be avoided.

(2) The giving of correct responses require some amount of self-insight into the subject. But we should not expect much self-insight from a “poorly adjusted” subject. This may also distort our results to some extent.

(3) Ambiguous questions or use of some words, the importance of which is not clear in the question may puzzle the subject. Here also the results will be distorted.

Personality inventories are very useful in school situations. They may be used by the teachers or school counsellors as very good screening instruments. Personality inventories will identify those pupils who are in great need of counselling. It is better to use total scoring method in school situations. It is a technical job. So personality inventories should always be administered by properly trained psychologists or counsellors.

Short descriptions of some of the well-known personality inventories are given here for clear understanding.

(a) California Test of Personality.

The scoring method is not so difficult. Three types of scores named as "a self-adjustment score", "a social-adjustment score" and a "total score" can be awarded. In this test point scores are given to subjects. Percentile norms are supplied by the authors. In a certain study for determining its reliability by Split-half method following results were obtained.

	Reliability.	SD.
"Total Score	·931	19·9
Self-adjustment Score	·904	11·5
Social-adjustment score	·908	10·0"

Therefore it seems that the reliability co-efficients of test batteries are sufficiently high.

This personality test has been found to be very useful in school situations for getting an idea about a pupil's personal and social adjustments.

Bell's Adjustment Inventory. (Hugh Bell, California)

Bell's Adjustment Inventory is a well-known self-questionnaire. It is simple in design and can be administered more easily than projective tests. But it should be administered by an experienced man. There are two forms of this inventory. The first form is meant for students of high schools and colleges. The second form is meant for adults. Test items are to be answered by marking either YES, NO or ?. Items in the questionnaire are like the following :—

"Are you feeling easily hurt	YES	NO	?
Do you enjoy social gatherings	YES	NO	?
Do you get discouraged easily	YES	NO	?
Are you often sorry for yourself	YES	NO	?"

This inventory purports to estimate an individual's feeling about himself and how he behaves in a particular situation. This inventory may be applied to all normal individuals. It is generally used for differentiating maladjusted pupils from those pupils who are considered by their teachers to be normal. This adjustment inventory is very useful in identifying those pupils who should be given Educational and Vocational Counselling.

The student form yields four separate scores for home adjustment (whether he is satisfied or dissatisfied with his home life?), health adjustment (whether he has some illness or is

keeping a good health), social adjustment (is he shy, submissive, retiring and so on), and emotional adjustment (whether he becomes nervous or feels depressed very easily). Twenty-five to thirty minutes are required to administer this inventory. Reliability of this adjustment inventory is reported to be high.

The adult form was reprinted in 1962. This form tries to reveal 6 aspects of "personal and social adjustment" of the subject. These six adjustment areas are as follows :—

1. "Home Adjustment". High Scores indicate dissatisfaction and low scores indicate satisfaction with home life.
2. "Health Adjustment". Low scores indicate satisfactory health adjustment.
3. "Submissiveness". High scores indicate submissive and retiring attitude, whereas low scores indicate self-confidence and assertiveness.
4. "Emotionality." High Scores indicate emotional instability. Low scores indicate emotional stability.
5. "Hostility." High scores are secured by those individuals who are critical and hostile to other members of the society. Friendly and accommodating persons generally achieve low scores.
6. "Masculinity-Femininity." Scores achieved by an individual in this area show his interest in opposite sex.

Percentile norms have been determined for all the forms of the Bell's Adjustment Inventory.

Bernreuter Personality Inventory

Another most widely used personality inventory is the Bernreuter Personality Inventory. This inventory was published in 1931. Originally this inventory was prepared for use at the college level but later on it has been modified with a view to making it applicable to school students, office employees and others. There are 125 items of "the self-rating or self-questionnaire" type in this inventory. Some of the items have been collected from tests prepared by Allport, Laired and Thurstone. Questions are to be answered by marking either Yes, No or ? (doubtful).

Following types of items are included in this inventory.

"Do you often feel miserable	YES	NO	?
Do you day dream frequently	YES	NO	?
Are you easily moved to tears	YES	NO	?
Are you slow in making decisions	YES	NO	?"

The special feature of this inventory is that "each item-response" is regarded as an indicator of "Several different traits." Bernreuter's inventory has been designed to measure the following 4 personality traits.

1. " B_1-N , Neurotic Tendency." (Emotional instability.),
2. " B_2-S , Self-sufficiency." (Generally do not require other's help or sympathy or advice.),
3. " B_3-I , Introversion-Extroversion" and
4. " B_4-D , Dominance-Submission."

Bernreuter says that the reliability co-efficients of his inventory range from .85 to .92.

Flanagan did some research work with Bernreuter's inventory. He carried on factorial analysis with the scores obtained by applying this inventory on 305 adolescents. Flanagan's factorial analysis showed that two more new traits should be added to the original four traits in order to explain all the responses of the subject. The two new traits suggested by Flanagan are 5. " F_1-C , Self-confidence" and 6. " F_2-S , Sociability."

So at present this inventory claims to measure 6 personality traits. Flanagan claims that these two new scores are quite independent because the co-efficient of correlation between them is .04.

Actual scoring method of answers is rather complex because specific answers are given "Weighted credits" in points. As a matter of fact the score values range "from +5 to -5." In a particular question the same answer "Yes" may carry a score of +4 on self-confidence and a score of -1 on Introversion-Extroversion. Again the same answer "No" may carry a score of -5 on self-confidence and a score of +2 on Introversion-Extroversion. So an administrator should receive proper training before applying this personality inventory.

Super₁ (1942) also carried on some research work with Bern-

(1) D.E. Super --- "The Bernreuter Personality Inventory: A Review of Research." Psychological Bulletin, 1942, 39, 94-125.

reuter's Personality Inventory. He found that this inventory yields good results when properly administered individually.

Minnesota Multiphasic Personality Inventory. (MMPI).

The Minnesota Multiphasic Personality Inventory is a self-report test and has been prepared for estimating "abnormal personality patterns." In the original inventory there are 495 items to be answered by marking any one of the words "true", "false" or "cannot say". The questions are presented in the form of "declarative statements" and are expressed in the first person singular number sentences. Items of this inventory are like the following :—

"I seldom worry about my health	True	False	Cannot say.
I sometimes feel like Swearing	True	False	Cannot say.
My hardest battles are with myself	True	False	Cannot say."

This inventory is suitable for adults. The MMPI can be applied both to psychiatric patients and to normal adults. Generally the personality inventories try to measure traits, tendencies and other areas of adjustments. This inventory purports to measure some clinical syndromes also. In MMPI, when the responses of different subjects are grouped they are found to yield many scales or distinct groups of responses resembling responses given by different groups of psychiatric patients. These scales or classifications of responses into different groups help to diagnose psychiatric patients having symptoms of hypochondriasis, depression, psychopathic deviate, paranoia, masculinity-femininity, hysteria, schizophrenia, psychasthenia, and hypomania.

Different groups of psychiatric patients give different types of responses. Most of the responses given by a particular subject having a particular mental disease will resemble the responses given by a group of subjects suffering from same type of mental disease. If a subject attains high score in any classification he is supposed to belong to that type of psychiatric patient.

Each scale has been prepared by grouping some test responses on a definite principle. Responses given by subjects are very carefully noted. It has been observed by many research

scholars that the responses given by mental patients differ from the responses given by normal adults. If same response is given to a particular question by a very small number of normal subjects and 70 to 80 per cent of clinical patients, suffering from paranoia, then that item (or question) is regarded as a diagnosing instrument for paranoic patients. All other classifications are made on the same principle i.e. by comparing responses with the responses given by a large number of particular type of patients. So at the time of construction of the inventory all the test items had to be applied to a large number of patients who were clinically diagnosed as psychiatric patients. A standard score higher than 70 is regarded "as an indicator of significant abnormality". Each item of the inventory is printed in a separate card. The subject is to classify them in accordance to the nature of his response (i. e. he is to say True, False or Cannot say). Originally this inventory was suitable for individual administration but in course of time a "group form" has been prepared. This inventory is said to be multiphasic because the same set of items can be used for diagnosing different types of personality disorders.

One or two hours of time is required to administer this inventory. It takes twenty to thirty minutes to score. A 'Scoring Manual' is provided. Properly trained persons should award scores. Help of psychiatrists or clinical psychologists should be taken for proper interpretation of the obtained scores.

Revision of 1951.

The M.M.P.I. has been revised in 1951 by S.R. Hathway and J. C. McKinley of Psychological Corporation, New York. At present this inventory consists of 550 self-descriptive items and are divided into 26 categories. A few new categories, such as, general health, gastro-intestinal condition, sex, occupations, morals etc. have been added to those original classifications or scales or categories. Individual cards or booklets are used for administration of the inventory. About 60 to 90 minutes are required to administer the revised form of the inventory.

EXERCISE

1. What is meant by "personality" of a pupil ? Describe how personality can be assessed and how such measurement helps guidance. C. M. C. 1966. W. B.
 2. What are the different types of personality tests ? Describe any two tests for measuring personality. C. M. C. 1967. W. B.
 3. Describe a guidance schedule and indicate its usefulness. C. M. C. 1967. W. B.
 4. Discuss the use of questionnaires in collecting information about a pupil for guidance. C. M. C. 1968. W. B.
 5. What are "Personality Traits ?" What is their importance in Educational and Vocational Guidance ? Show how the personality traits of school students may be assessed. B. T. 1969.
 6. What are personality tests ? Name some of them and indicate how they provide some important information about a pupil not available through other tests. C. M. C. 1968. W. B.
 7. What is a rating scale ? When is such a scale used in the school guidance programme ? C. M. C. 1969. W. B.
 8. Write short notes on any two of the following :—
 - a. Questionnaires ;
 - b. Personality tests ;
 - c. Cumulative Record Card ;
 - d. Guidance Schedule. C. M. C. 1969. W. B.
-

CHAPTER XIX

PROJECTIVE TECHNIQUES

Advantages and Disadvantages of Projective Tests-Word Association Test—The Rorschach Inkblot Test-Thematic Apperception Test.

Personality inventories such as Bernreuter Personality Inventory, M.M.P.I. and the Bell's Adjustment Inventory are extensively used for guidance purposes. But many people are of the opinion that Projective tests are most accurate instruments for analysing the personality of an individual. Projective techniques are capable of revealing many aspects of an individual's behaviour. These aspects are not possibly revealed by other testing techniques. Even the other day projective techniques were used by clinical psychologists to determine the characteristics of mental patients or abnormal persons. This technique will give in a very short time large amount of information about an individual's personality characteristics. Now-a-days many trained school counsellors are using projective tests for collecting information about a student's adjustment to his school and learning situation. It has already been said that some hindrances of personality development may interfere with a student's achievement and choice of a career. Projective tests will enable a school counsellor to gather more information about personality characteristics of students and make them aware of their individual personality traits and their influence on the learning process. It will be possible to tell an underachiever how his personality development is interfering with his achievement.

In projective tests the stimulus is presented to the subject in an unstructured form or in such a novel way that the subject may not use his previous knowledge in responding to the stimulus. The subject tries to give structure to those unstructured situations according to his own press and needs. According to Murry 'Press' means a force which influences an individual to respond in particular way and 'need' means 'what he wants. The stress may be emotional stress also. By the term unstructured situation we mean a situation which can be interpreted by an

individual according to his own will. An individual will unknowingly reveal his own personality characteristics or personality trends through his responses in a projective test. Projective techniques will touch the core rather than the periphery of his personality structure. Sanford says that "the method is designed to penetrate somewhat below the peripheral personality and to disclose latent needs, images and sentiments which the subject would be unwilling or unable to embody in direct communication."

Projective tests will give us an idea of "the whole person" because they make a "total approach" to an individual's personality. Unstructured situations having no definite patterning will require an individual to project himself outside and to give expressions which are supposed to have been caused by the presses and needs that are within him. From the subject's expressions the experimenter will get some idea of the subject's hidden dynamics. R.W. White¹ says that "Since little external aid is provided from conventional patterns he (the subject) is all but obliged to give expression to the most readily available forces within himself. It is further characteristic of projective methods that the subject does not know what inferences the experimenter intends to make ; his attention is focussed on the play or task in hand, and it is well-nigh impossible for him to guess at its more remote psychological meaning. Favourable conditions are thus created for unselfconscious revelation from the hidden regions of personality."

Many psychologists think that these tests originated from Freud's psychoanalytic techniques of dream interpretation or from Jung's Free Word Association techniques.

Projective techniques will give a probable "Portrait of the entire personality." Projective tests are regarded by many people as essential method in applied psychology and research work.

Limitations of Projective Tests

Though Projective tests have several advantages yet they have some limitations also. The first disadvantage of such tests is their objectivity. As different subjects are expected to give

(1) Mentioned in Hunt. J. Mev (ed). Personality and the behaviour disorders. New York : Renold Press. 1944.

different responses to the same stimulus these tests cannot be fully objective.

Their validity is also questionable. It is not possible to say that a particular Projective test measures a particular personality trait.

A subject can give distorted responses if he is aware of the nature of the stimuli and the method of interpretation of responses.

These tests are time-consuming and require a suitable environment for their administration.

On account of their highly technical nature they require specially trained personnel for their administration and scoring.

1. Word Association Test

The Word Association Test is one of the oldest projective tests. Jung suggested to use this test in 1919. This test contains a list of 50 to 100 words which are presented to the subject orally one after another. The subject is asked to respond by telling the first word which occurs to his mind as soon as the stimulus word is read out to him by the experimenter. Originally Jung prepared a list of 100 stimulus words which he thought would reveal the subject's various conflicts, complexes and reasons of maladjustments. The subject is asked to give his response at ease without mentally searching for any particular answer.

Rosanoff carried on some research work with this test and modified Jung's original list of stimulus words. After him Rappaport, Gill and Schaefer again revised the list and reduced the number of words to 60 only. They selected only those words which they thought would touch on areas of emotional complexes and personal ideation. Some words are expected to elicit responses of domestic, aggressive and sexual nature. Many nouns are used as stimulus words.

The experimenter notices the content, speed and manner of responding to stimulus words. The nature of responses or associations will give him clues for interpretation. Some responses may be opposites, rhymes such as day-night, father-mother. But others would tap the inner self of the subject and would reveal his emotional troubles. If the subject's response to the word

"father" is "tiger" it will give the experimenter some indication of the relationship between the father and the son. In this way some responses are considered as significant of something. The reaction time of the subject is also important. If the subject is very slow in giving response, finds it difficult to respond, finds the stimulus word most embarrassing or blocking or cannot think of any response word the experimenter will suspect that there are some emotional troubles. Again there may be some "close associations" such as "home-my home" or some "distant associations" such as "Radio-England (B.B.C.)." Clinical Psychologists are better trained to interpret such responses. The experimenter should undergo proper training before applying this test.

Jung's list intended to diagnose many complex problems of adults and all his words are not suitable for application to children. Later on Cattell prepared a list of stimulus words which can be profitably applied to children.

There is another kind of Word Association Test which is known as the "Continuous" or "Chain" type of Association Test. In this type the subject is directed to tell everything which occurs in his mind at the time when the stimulus word or words are presented to him. He is allowed sometime to tell his tale.

Meltzer used Chain Association Tests in order to determine children's attitude towards their parents. He took into consideration the first ten responses of the subject to a particular stimulus word. He was able to say whether a child is attached to his parents by interpreting responses in Chain Association Tests. The behaviour of the subject at the time of giving responses is also important.

Maller and Malamud devised another kind of Word Association Test which is known as the "word connection" test. They prepared a list of 50 stimulus words. To each of those stimulus words they suggested two probable responses. One of the responses resembles to those of normal persons whereas the other resembles to responses given by neurotics. It is a paper-pencil group test. The subject is instructed to put a tick mark to that response which he thinks to be appropriate. The number of

ticks given to responses resembling to neurotic persons are taken into account in giving him scores. This test helps an experimenter to say whether the subject has neurotic tendency.

2. The Rorschach Inkblot Test

The most frequently used projective test known as the Rorschach Inkblot Test was prepared by Hermann Rorschach, a famous Swiss psychiatrist. He carried on some experiments for determining the differences in the nature of perception of normal persons and that of mental patients. He noticed that maniacs, schizophrenics, hysterics and other mental patients perceive stimuli and respond to them in a manner different from that of normal persons. He said, that personality make-up of persons, both normal and abnormal, can be predicted from their perceptual characteristics. His Psychodiagnostics illustrating his theory and procedure was first published by him in 1921. He died shortly after that year.

Several psychologists of the Rorschach Research Exchange carried on experimentations with his test in the U.S.A. It came to the notice of a large number of people after the publication of a monograph on this test by Beck in 1937. Beck used this technique in a hospital at Boston. Another American psychologist named Klopfer also carried on extensive studies on Rorschach's original theory and practice. At the beginning the use of the Rorschach's Test was limited to clinical cases but during the War period it was freely used in the army to deal with neuropsychiatric cases. Although this test was prepared for diagnosing personality patterns of mental patients, now-a-days this test is applied to school children, college students, office employees, skilled and semi-skilled workers and to other persons who are suspected to have some mental troubles.

This test consists of 10 ink blots drawn on ten separate cards. Designs of these ink blots do not seem to have any definite shape or meaning but they are unstructured. They are regarded as ten stimuli. The subject is to respond to these stimuli. Different subjects perceive them in different ways. The nature of perception will depend upon the mental condition of the subject. The subject will project himself into those pictures and give his interpretations. From his interpretations a trained psychologist

will be able to form an idea of the inner self of the subject. Five inkblots are drawn only in two colours—black and white (i.e. in different shades of gray). Two cards are drawn mainly in gray with a shade of red. The remaining three inkblots are coloured. All of them are blended with different colours, such as, orange, green and pink. The subject is shown all the cards one after another and is asked to say what he sees in the ink blot without any hesitation. The subject is at liberty to tell whatever he likes. There is no time limit.

This test should be administered in a calm and quiet room and there should be only the experimenter and the subject in the room. There should be a small table in the room. The subject will sit on the other side of the table with his back turned towards the experimenter. The experimenter will have to engage the full attention of the subject. At the very beginning proper rapport should be established. When the inkblots are shown to the subject one by one, he is asked to tell "what could that be?", "what do you see here" in this inkblot? There is no question of right or wrong answer because different subjects will give different interpretations. Though there is no time limit yet the experimenter will have to note down the time taken by the subject to give his response to each inkblot. The time taken by the subject to give response and the manner of holding the card (ink blot) may have some significant meaning to the experimenter. The ink blots may be shown again in order to give an opportunity to the subject to clarify some of the responses. The experimenter is to note very carefully whether the subject gives emphasis to the forms, colours or to some definite aspect of the inkblots while giving his interpretations.

This test is used as an individual test. Some psychologists have tried to use this test as a group test by projecting those ink blots on a screen. But the group administration of this test has not yet been found to be up to the mark. It is, however, expected that these psychologists will in the near future succeed in discovering some very successful method of the group administration of this test very soon.

While awarding scores the scorer classifies the responses gene-

rally into three categories. The scorer is more concerned with the mode of seeing the inkblots by the subject than what he sees. These three categories are "location, determinant and content." The term "location" refers to the area of the ink blot to which the subject gives more emphasis while giving his response. The subject may perceive the whole (W), a particular or a larger part (D), a smaller part (d) or some unusual details (Dd.). The scorer will have to notice very carefully the elements which the subject sees and refers to in his statements.

The term "determinant" refers to the form or shape, colour, shading and any movement perceived by the subject. Responses may be found to have given emphasis to the form (F), colour (C) or human movement (M). Some of the responses may be influenced by two or more determinants, such as, form and colour (FC).

In scoring a response from the view point of "Content" the scorer notices whether the subject sees in the ink blot attributes of human (H), detailed parts of human (Hd), animals (A), parts of animals (Ad) or Objects (ob), nature (N), such as, "snowflake" and so on. The subject may give some popular response (P) or some original response (O). Judgments are to be made from the story which the subject narrates on seeing the ink blots. Judgments in all the three categories of responses—location, determinant and content are to be considered or totalled separately in order to get an idea of the individual's total of different types of responses.

Responses may be interpreted in the following way. Generally more whole-wise responses indicate the subject's power of generalisation and general survey. If a subject makes a bit detailed response he is supposed to be concerned with concrete objects and habituated to attack problems more practically. But extremely detailed responses indicate pedantry, overcautiousness and meticulousness. Feeble-minded subjects will not be able to see any meaningful thing within the ink blots. Feeble-minded persons give the same or stereotyped responses in all cases. They will generally refer to common objects. Responses in terms of imaginative movements generally indicate¹delusion, fantasy and the like. Egocentricity, impulsiveness and emotionalism are

indicated by responses having too much emphasis upon colour. Responses having emphasis upon "form" generally indicate intellectualism and steadiness. But such responses indicate to some extent extroversion also. Well-adjusted persons generally respond in terms of form. That does not mean that well-adjusted persons ignore colour altogether. Ratio of responses in terms of human movement and colour responses (M : C) gives the experimenter an idea of introversion and extroversion. Responses in terms of excessive human movement indicate introversion whereas too much emphasis on colour refers to extroversion.

Standardisation of Rorschach Test.

As the Rorschach test is very widely used through out the world some psychologists wanted to standardise it. But Rorschach himself and Rappaport opposed their idea of standardisation. In spite of their unwillingness some psychologists tried to standardise it. Hertz₁ however tried to determine Rorschach norms by applying the test to 300 junior high school adolescents and published a scoring list. But as the test was devised for finding out abnormal subjects her attempts were severely criticised by many.

Reliability of the test could not be definitely determined. Bell₂ in his book *Projective Techniques*, has described some studies on the reliability of this test. Different methods, such as, test-retest method, split-half method and matching methods were used by different psychologists for determining reliability of this test. But not a single study could yield reliable results.

The next question is the validity of the test. Some psychologists applied this test to a group of psychotic and neurotic subjects and compared their test results with the results of clinical diagnosis made by experienced clinical psychologists. Another method is known as the "blind diagnosis" where the test records are compared with the report of a competent exami-

(1) Hertz M. R. "Rorschach norms for an adolescent age group." —*Child development*, 6(1935). 69—76.

(2) Bell J. E. —*Projective Techniques*. New York : Longmans, Green & Co., 1948.

ner who knows the subject very well. Rappaport, Gill and Schaefer carried on some studies. They found that the Rorschach test can definitely differentiate psychotic and neurotic persons from normal people. Therefore for all practical purposes it is a valid test.

One thing we should remember here that responses given by different subjects will be different and this diversity of responses will give an expert examiner clues about their deep seated mental complexes. Psychometric tests purport to measure an ability whereas a projective test tries to diagnose mental troubles and problems. So normal methods of standardisation which are applied in psychometric tests may not be applicable in projective tests.

This test can not be applied by each and every psychologist. An experimenter who intends to use this test should have proper training and power of "insightful interpretation" of significant responses.

This test has been used by many people in order to classify abnormal persons. This test serves as a part of the diagnostic procedure for determining such abnormality as feeble-mindedness, depression, convulsive states, alcoholism and the like.

3. Thematic Apperception Test

In 1938, Murry, Morgan and their co-workers prepared many tools in order to determine the nature of hidden attitudes and motives of a group of subjects. Among the various tools prepared by them to study the personality traits the most important one was the Thematic Apperception Test or the T.A.T.

The T.A.T. consists of 30 pictures which are to be interpreted by the subject one by one by making a story about each picture. Of these 30 pictures ten are meant for men only, ten are meant for women only and the rest are meant for both men and women.

In the men's group of pictures some of the pictures are suitable for boys below 14 years and some are suitable for boys above 14 years. In the women's group of pictures also some are suitable for girls below 14 years and others are suitable for girls above 14 years. In some way or other at least 20 pictures

should be used for a particular group of men or women. Those pictures generally show human beings placed in ambiguous situations having different relationships and attitudes. Unstructured characteristics of those pictures are maintained in order to allow different subjects to interpret them differently. The subject is to tell a story about each picture and to tell "What the situation represented is," "What events led up to it," "What the motives and feelings of the characters depicted in those pictures are, what is going to happen and "What will be the outcome." It is expected that the responses will be influenced by the wishes, attitudes, past experiences and conflicts of the subject. In telling his story the subject will naturally project himself and will identify himself with a character liked by him in the picture.

The examiner will keep a written record of the story told by the subject. There is no time limit and no limit for the length of the story. A subject may take two one-hour sessions for telling his stories. Time taken by the subject to tell the story, his readiness to tell the story, hesitations, nervousness, the content of the story, misrecognitions of some portion and the part of the picture on which more emphasis is given is very carefully noted. It may be possible to identify the subject's conflicts, urges and attitudes towards self from these data.

Interpretation of Responses

The method of scoring the responses in the T.A.T. is a complex process. The scorer should be a highly trained and fairly experienced person. Responses to the T.A.T. may be scored both subjectively and objectively. The subject's "quality of thinking" and his ability to keep his overt behaviour under control in emotional stress and strain can be judged by the test. According to Murry the responses may be scored "in terms of environmental press and latent need." Every response of the subject may be interpreted as results either of a press or a need. The term "environmental press" means the force, such as, dominance, aggression, blame, retention, affliction, noxiance, bad and unhygienic home condition, poverty, physical dangers, hostile parents, very strict teachers etc., which makes the subject act or give the particular response. The term latent need, such

as, acquisition, aggression, autonomy, abasement, seclusion etc. (i.e. which may be in the unconscious level) refers to things the subject wants to achieve. So in some cases the subject's response may reveal his unconscious dynamics.

The theme of the story told by the subject is important. Repetition of the same theme in several pictures may reveal his personal idiosyncracies and repressed wishes. The story may be factual, dreamy, symbolic or mythical. While making the responses the subject may give more emphasis to some parts of the picture, omit some parts or distort some scenes. The language used and the style of expression will give the examiner an idea about the subject's intellectual, neurotic, schizophrenic or other significant trends.

Tone of the story will give some idea about the subject's outlook, attitude and mood. Some psychologists claim that the T.A.T. is capable of predicting whether the subject is cheerful, indifferent, sober, thoughtful, melancholic, anxious, aggressive melodramatic and so on.

It is told that the T.A.T. will reveal the subject's mental dynamics, distortions, repressions, adjustment difficulties and level of aspiration. An Educational and Vocational Guidance Officer may take help of the T.A.T. in order to know the subject's outlook, attitudes, mood, level of aspiration and adjustment difficulties. He will be able to determine which course of studies or which type of occupation will be liked by the subject and to which vocation the subject will be able to adjust himself most successfully.

A group of psychologists are not in favour of the T.A.T. They think that the method of interpretation of responses is very complex and needs highly trained personnel to interpret them. According to them all the pictures of the T.A.T. are not suitable for all subjects residing in different and distant countries. As a matter of fact some psychologists do not use Murry's pictures now-a-days

Another group of psychologists have recommended that instead of using all the pictures it is better to use just those pictures only which will reveal the suspected conflicts in a particular area.

EXERCISES

1. What is problem behaviour? Give instances, discuss probable causes and suggest remedies. C.M.C. 1965. W.B.
 2. Write short notes on any two of the following :—
 - (a) Projective Tests.
 - (b) Personal Guidance. B.T. 1965.
 3. Write notes on :—
 - (a) Word Association Test.
 - (b) The Rorschach Inkblot Test.
 - (c) Thematic Apperception Test.
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CHAPTER XX

MENTAL TESTING

Psychological Tests—Some Common Uses of Psychological Tests—Categories of Psychological Tests—A Standardised Test and its Characteristics—Test Items and the test maker—Validity of a Test—Reliability of a Test—Personal Errors—Errors of Interpretation—Determination of Validity Indices—Determining Reliability of Tests—Objectivity—Usability—Item Analysis—Standardisation of Tests.

Psychological Tests

A class room teacher or an educational administrator must possess some sort of measuring device by which he can measure the level of educational achievements of their students. Several evaluation techniques have been devised for measuring achievement and behaviour pattern of pupils. Psychologists have prepared many psychological tests which enable the class room teacher to get an objective and comprehensive picture of the pupil and his actual scholastic achievement. These tests are often called mental tests.

In such tests some selected stimuli are presented to the pupil in order to get some response from him. These responses enable the psychologist or the teacher to make fairly accurate judgment about the abilities, interest, intelligence, achievement and several other mental conditions of the pupil.

Ordinary tests prepared by the class room teachers are generally called "informal tests". But standardised psychological tests which are prepared by specialists and are administered, scored and interpreted under controlled and standardised conditions are generally called Standardised Psychological Tests.

Mursell₁ has stated that "A psychological test then, is a pattern of stimuli selected and organised to elicit responses which will reveal certain psychological characteristics in the person who makes them".

Now the question may arise—What are the psychological characteristics which are revealed by psychological tests. They

1. J.L. Mursell—Psychological Testing—Longman's Green And Co. New York.

may be intelligence, interest, attitudes, different aspects of personal and social adjustments, school achievement, numerical ability, mechanical aptitude, aptitude for some definite vocation, musical talent, spatial ability, aesthetic ability, creative ability, emotional set up or personality traits, introversion, extroversion etc.

Different types of stimuli may be presented to the subject in order to measure different psychological characteristics. These stimuli may be pairs of words having the same or different meanings, completion of incomplete sentences, coloured or uncoloured blocks to prepare some design, a list of occupations and activities to be ranked in order of preference. These stimulus items or questions of psychological tests are known as "test items". Again a single test item may be divided into several sub-tests.

Some Common Uses of Psychological Tests

Psychological Tests may be useful for the following purposes :—

- (1) To determine a person's typical behaviour.
- (2) To measure a person's intelligence.
- (3) To get an idea of a person's interests.
- (4) To determine a person's attitude toward some people or thing. They can be used for determining various aspects of personal-social adjustment.
- (5) To determine a person's aptitude for success in some future learning activity.
- (6) Achievement tests may be used for evaluating a pupil's success in some past learning activity.
- (7) Psychological tests may be used for improving the learning and instruction methods.
- (8) Psychological tests may be used for comparing the learning capacity and the actual achievement of a pupil.
- (9) To supply over-all information about a pupil's progress to his parents.
- (10) For Guidance and counselling purposes.
- (11) For good school administration concerning the placement service, class promotions and grouping of students.

These tests help the educational administrator in interpreting the goals and accomplishments of the school.

These tests are used for many other purposes.

Types of Psychological Tests

Psychological tests may be of two types :—

- (1) Psychometric Tests, and
- (2) Projective Tests.

Psychometric Tests (Objective Tests) help us to measure the amount of the mental traits or mental characteristics of our pupils, whereas a Projective test helps us to ascertain the quality or type of the pupil's personality traits.

In Psychometric tests definite predetermined values are assigned to stimulus situations, that is, the correct responses are determined previously by the test maker.

An example

A subject is asked to say what number will come after 27 in the series 1, 3, 9, 27.

The answer will be 81.

In a sentence completion test he is asked to supply some missing words in order to make a complete sense.

But "a projective method for the study of personality involves the presentation of a stimulus situation designed or chosen so that it will mean to the subject not what the experimenter has arbitrarily decided that it shall mean..... but rather whatever it must mean to the person who gives it, or imposes upon it his private idiosyncratic meaning and organisation₁". In the Projective method some unstructured stimulus situation is presented to the subject. The subject is to interpret the unstructured stimulus according to his own wishes.

Therefore Psychometric tests are used for measuring different kinds of abilities and aptitudes of a subject, whereas Projective instruments are used in clinical psychology and psychiatric work for personality assessment.

- (1) Sergent, Helen—Projective Methods; their origin, theory and application in personality research, *Psychological Bulletin*, 42, (1945), p. 257.

In projective techniques the subject is at liberty to say anything he likes. His responses are interpreted by a trained psychologist or a psychiatrist for judging the personality characteristics, emotional trends and blockages or the type of disposition.

Categories of Psychological Tests

Different Psychological tests are given different names or are placed into different categories on the basis of the following :—

- (1) Purpose of the test.
- (2) Nature of the items included in the test.
- (3) Mode of Administration.
- (4) Speed and Power Tests.

1. *Names of tests according to the purpose for which they are used.*

Mental tests are named according to the name of the mental trait which they intend to measure or reveal.

- A. Intelligence Tests.
- B. Aptitude Tests—e. g. Mechanical Aptitude Test, Clerical Aptitude Test etc.
- C. Tests for Special Abilities and Talents, e. g. Musical ability test, artistic ability test etc.
- D. Tests for different school subjects. e.g. Achievement Tests.
- E. Attitude Tests—Social Attitude Test, Scientific Attitude Test.
- F. Interest Blanks—Personal Interest, Vocational Interest, Subject Interest Test etc.

2. *According to the nature of the items included in the test.*

Some tests are named according to the types of items included in the test.

- (a) Verbal Tests, and
- (b) Non-Verbal or Performance Tests or Non-Language Tests

Verbal Tests :

In the verbal type of psychological tests, words (or languages) or mathematical symbols are used as stimulus. The stimulus is given in words and the responses are also given in words.

Performance Tests :

In non-verbal or performance tests as far as possible words or languages are not used.

It is very difficult to construct a test totally non-verbal because while giving the stimulus or asking questions the experimenter uses at least a few words. Directions are given orally. But while giving the response the subject does not use words.

Non-verbal tests may be of the following types :—

(a) Several cut pieces of a picture are supplied to the subject along with a copy of the original picture. The subject is to arrange the cut pieces in order to make it look like the original picture.

(b) Block Tests : Some wooden blocks are supplied to the subject. The subject is to arrange those blocks in order to give them a predetermined design.

(c) Form Board Test : In a Form Board Test a form board with holes of various sizes and shapes cut into it and some cut out pieces of wood are supplied to the subject. He is required to fit the corresponding cutout pieces of wood into the spaces of the form board.

Performance tests may be used for measuring Manual Dexterity and Mechanical Aptitude.

3. According to the mode of administration.

They are (i) Individual Tests and
(ii) Group Tests.

On the basis of the mode of administration ; tests are very often named as Individual Tests and Group Tests.

Individual tests are administered to one subject at a time. A Group test may be administered to a group or groups of subjects simultaneously.

When a test, say an intelligence test, consists of several test items by which we measure the intelligence of children of different ages, beginning from low to high ages and the items are arranged in order of difficulty we may call it an Intelligence Test Scale. There are some psychologists who call all individual tests as scales. It may not be true.

In our schools we generally use achievement tests. Written achievement tests may be Essay Type tests or objective tests. We are all familiar with the most ordinarily used and traditional Essay Type Tests from long ago. As new type tests are scored objectively they are called objective tests.

Essay type tests are influenced to a great extent by the personal idiosyncracies or personal bias of the examiner. Different examiners or even the same examiner, in different situations, may assess the same answer paper differently by awarding it different marks.

But objective tests are prepared in such a way that different examiners, even under different situations, are obliged to give the same marks to the same answer paper. All examiners will assess a particular answer paper in the same way. In such tests responses or answers are predetermined or fixed before. There is only one answer to a particular question. Personal judgment, examiner's personal liking or any kind of disturbing element cannot influence the mind of the examiner while marking answer papers.

Objective tests which are carefully prepared by specialists, administered by specialists, scientifically scored and interpreted under standard conditions are generally known as standardised tests. A standardised test must possess some qualities or characteristics which we shall discuss after a while.

There are psychologists who are in the habit of calling their tests as the "mastery tests", "survey tests" and "diagnostic tests." With the help of the "mastery test" we can measure the knowledge, skills and other learning outcomes which our pupils are supposed to have acquired. The "survey tests" make a general survey of the general achievements of various pupils. The other type of tests, that is, the diagnostic tests reveal specific disabilities and deficiencies in achievement or in other areas.

4. *Speed tests and power tests*

In addition to the tests which we have already mentioned above there are other types of Psychological tests which are generally classified as "Speed Tests" and "Power Tests."

In a 'Speed Test' a large number of items of equal difficulty are presented to the subject. He is asked to answer as many items as he can within a limited time (e.g. crossing of a particular letter from all the words of a given piece). In this type of test there is a specified time limit and scores are given according to the total number of items completed correctly by the subject within a given time. In speed tests items are not very difficult

but their number is very large and it may not be possible on the part of a single individual to finish all the items within the specified time. Psychologists who want to measure a pupil's typing speed, shorthand speed or clerical ability generally use Speed Tests.

In a "Power Test" items of increasing or graded difficulty are arranged systematically. A reasonable period of time, that is a space of time within which most individuals can complete the test, is allowed to answer the test. This time limit is experimentally determined by the test maker.

It is very difficult or rather impossible to construct a pure speed test or a pure power test because speed and power go hand in hand. A person possessing less capacity will be able to solve less number of items even in a speed test. Differences in capacity will surely influence the speed. On the otherhand, as tests are prepared by human beings most of the tests do not consist items of such difficulty which cannot be solved at least by the most abler individuals who are tested. If sufficient or unlimited time is given the most abler subject may answer all the items correctly. Therefore our psychological tests normally measure neither speed nor power exclusively.

Other methods which are used by the Psychologists are interview methods, rating scales, questionnaires, sociometric techniques and different types of inventories.

Preparation and Administration of Objective Tests

There are some general principles and procedures of test construction. Before going into details it is better to say something about the characteristics of the Standardised Tests.

A standardised test and its characteristics

Most widely used Psychological tests are Standardised Objective Tests. "A Standardised test is one which has a fixed set of test items, specific directions for administration and scoring, and has been given to representative groups of individuals for the purpose of establishing norms."

Here we have introduced a new term "Norms" which demands some clarification. We shall define the term "Norm" more elaborately later on. It will be sufficient now to say that "Norms are merely the typical or average scores made by repre-

sentative groups of individuals at various age and grade levels." If we want to interpret the raw score of a particular individual in a particular standardised test we will have to compare the raw score with the "norm" obtained by applying the test to a large group of individuals whose characteristics are known.

Norms help us to compare the performance of a particular boy with the typical performances of other boys of his age or grade.

The characteristics of Standardised tests can be listed in the following way.

1. These tests are prepared by duly trained test specialists. Proper item analysis have been done. Reliability and validity of the tests are calculated. They are reliable and valid tests. Technical qualities of the test items have been examined. Test items are arranged in order of graded difficulty, discriminating power and their relationships with a criterion are determined.

2. The whole test has been administered twice. For the first time it has been tried out as the "preliminary tryout" and for the second time it has been applied on a large and representative group of pupils of the same age and class for the final standardisation.

3. The test should be an objective test. If it is used in different areas under standard conditions the scores will always be the same. Procedures for administration and scoring should be clearly stated.

4. Necessary "Norms" are available for easy interpretation of the test scores.

5. If possible there should be equivalent or comparable forms of the test.

6. For proper administration and scoring of the test, a "Test Manual" should be provided with the test. Such a Manual is necessary also for interpreting and using the test results.

Test Items and the Test Maker

Preparation of the test items is an art. Selection of the test items is a difficult task. As good teaching, it also requires some specialised skills. How to prepare or construct a psychological

test should be learned. One who wants to prepare a psychological test should possess the following qualifications.

- (1) He should know the subject matter well.
- (2) A thorough knowledge of the psychological and educational principles is essential.
- (3) He should have sound power of judgment.
- (4) He should be a patient and hardworking man.
- (5) He should possess some creative ability.
- (6) He should have love and zeal for this type of work.
- (7) Sufficient time and energy should be spent in such work.

Actual Selection of Test Items

First of all we should determine what ability or achievement we want to measure. Then we are to select what kind of test materials or test items will have to be used in the test. In order to construct our test we will have to make a collection of a large number of test items which will measure the type of ability which we want to measure.

We should prepare very carefully some test items, which, we think, are concerned with the ability we want to measure and include them in the preliminary test. Some experts in that branch of knowledge may be requested to examine our collection of test items. Suppose we want to prepare a mechanical aptitude test. In this case we can discuss the matter with the professors or the teachers of Engineering Colleges, Factory Foreman and Supervisors, Psychologists, Headmasters of Technical Schools and several other persons who have sufficient knowledge of the Technical subjects and have some idea about the abilities which are essential to becoming an engineer.

After discussions with them some of the items which seem to be irrelevant may be dropped out from the test.

The test items thus selected should be suitable and of the general level of difficulty. Test items should be difficult enough but they should not be too difficult for the individuals for whom they are designed.

If the test is meant for school children of a certain age it should be made suitable for them; if it is meant for adults,

it must be of some higher level of difficulty. Our test items should cover a certain range of knowledge or ability. Test items should be arranged in order of graded difficulty. There should be some items which are easy and some items which are difficult.

In psychological or mental tests some specialised types of questions are used as test items. The following types of test items are generally included in modern psychological tests.

- (1) Short-answer item and completion test items.
- (2) True-false, yes or no, or alternate response items.
- (3) Matching exercise items.
- (4) Multiple choice or Multipurpose-choice items.
- (5) Crossing of Superfluous part.
- (6) Arrangement in rank order.
- (7) Rearrangement of disarranged parts.
- (8) Direction Test.
- (9) Combination or recognition of figures of different shapes.

Some examples of a few types of test items are given below.

I. Short-Answer item and Completion items

These two types of items are almost the same. These items can be answered by underlining, encircling or putting a check mark (\checkmark) on a phrase, a word, a number or a definite symbol.

Examples :—

- | | |
|--|--------|
| (i) The third battle of Panipat was | A—1671 |
| faught in the year | B—1738 |
| | C—1761 |
| | D—1773 |
| | E—1791 |
| (ii) If $\frac{x}{2} + \frac{x}{4} = 6$, then x equals to ... | (A) 7 |
| | (B) 9 |
| | (C) 8 |
| | (D) 12 |

2. True-False, Yes or No, Alternate Response Items

In these items the subject will read the question and will have to answer the question by marking either the word true or

false, right or wrong, correct or incorrect, yes or no, agree or disagree, fact or opinion and so on.

Alternate—Response type items are generally used for measuring “the ability to identify the correctness of statements of facts, definitions of terms, statements of principles, and the like.” In such items the words “T” and “F” will be written on the one side of the question. The subject is to put a circle round the word (T) if the statement is true. He is to put a circle round the word (F) if he thinks that the statement is false.

Examples :—

- | | | |
|----|----|--|
| T. | F. | 1. The earth is a planet. |
| T. | F. | 2. The green colouring material found in a plant leaf is called Chlorophyll. |
| T. | F. | 3. Calcutta is the capital of India. |
| T. | F. | 4. All men are not mortal. |

3. Matching Exercise Items

In Matching Exercise type of items two parallel columns are given. In the first column, generally written on the left-hand side, are given some words, sentences, phrases, numbers or symbols. On the right-hand side are given some words, numbers or symbols. One word or number from the left-hand side will have to be matched to a word, number, phrase or sentence given on the right-hand side. Matters written on the left-hand side are called premises and those given on the right-hand side are called responses.

Examples :

- | (i) | Column A. | Column B. |
|-----|---------------------------------------|---------------------------|
| 1. | Who invented Telescope. | (a) Gel. J.N. Chowdhury. |
| 2. | Who was the first President of India. | (b) Tensing Norkay. |
| 3. | Who invented Telephone. | (c) Dr. S. Radhakrishnan. |
| 4. | Who climbed the Mount Everest first. | (d) Dr. Rajendraprasad. |
| | | (e) A. G. Bell. |
| | | (f) Galileo. |

(ii) Finding Relationships.

Hand : Finger :: Leg :

Find the relationship between the first two words "Hand" and "Finger" and write a word after the word "Leg" having same relationship with it.

4. *Multiple-Choice or Multipurpose Items :*

By items like short-answer items, true or false items or matching exercise items it is easy to measure simple learning outcomes. But in order to measure less simple or more complex achievements or "the more complex outcomes in the knowledge and understanding areas" multiple-choice items are generally used.

In a multiple choice test item a list of probable solutions (a correct answer and a few distracters) are given along with the question. The list of suggested answers will contain one correct or the best answer. The subject is to point out the correct or the best answer from the list of probable solutions.

In all four or five words, phrases, numbers, symbols or names are given in the list of suggested solutions and they are called alternatives. The correct alternative is known as the answer or correct response, whereas the remaining alternatives are called distracters. Distracters should be very carefully selected because they will have to distract the uninformed subject away from the correct answer. When a problem is presented in the form of a question or as an incomplete statement it is called the stem of the item.

Multiple-Choice items may be prepared in the following forms.

- (a) "Direct Question form."
- (b) "Incomplete-Statement Form."
- (c) "Best-Answer type".
- (d) "Correct-answer type".

Examples :—

Direct Question form.

- Q. In which one of the following cities is the capital of India located ?
- A. Calcutta.
 - B. Bombay.
 - C. Madras.
 - D. Delhi.

Indirect question form.

Q. The Capital of India is located in

- A. Calcutta.
- B. Bombay.
- C. Madras.
- D. Delhi.

Best-Answer type.

Q. Which one of the following factors contributed most to the selection of Delhi as the Capital of India ?

- A. Central Location.
- B. Good climate.
- C. Good highways.
- D. Large population.

Correct-Answer type.

Q. Which one of the following is an example of a Chemical element.

- A. Acid.
- B. Sodium Chloride.
- C. Oxygen.
- D. Water.

Incomplete Sentence. Stem and correct answer.

Q. The National Integration Council of India was established

- (a) to develop a new system of communal law in the country.
- (b) to provide Central Reserve Force to all the States of India.
- (c) to maintain peace and unity among the people of India.
- (d) to establish centrally sponsored industries in different parts of India.

Multiple-choice items may be used to measure the ability to apply knowledge of facts and principles.

Example :—

- (i) Direction—Underline the word which makes the sentence correct.

which

This is the girl whom stood first in the class.

who

(ii) Cause and effect relationship.

Q. To feed the ever growing population of India we should...

- A. make our marketing condition easier.
- B. conserve the fertility of our soil.
- C. provide more work to our villagers.
- D. produce more food in our country.

In multiple-choice test items the problem should be well defined. There should be several plausible distracters and irrelevant clues to the correct answer should be avoided.

1. Validity of a Test

A test is said to be a valid test when it measures what it purports or intends to measure. A test maker will be successful if his tests measure what he intends to measure. His test will have to yield authentic results. The validity of a test depends upon the fidelity with which it measures the desired ability. There may be some constant errors in our measuring instrument. These constant errors may vitiate our test scores.

Suppose a man prepares a test for measuring intelligence but he selects items which measure some other knowledge or skills. We cannot call his test a valid test of intelligence because his test will not measure what he intends to measure.

A psychological test should be a valid test because validity is one of the essential characteristics of such a test.

2. Reliability of a Test

A psychological test may suffer from some kind or other forms of variable errors or chance errors. Such errors are generally due to accidents, inaccuracies and many other similar reasons. Special care and devices should be taken in order to avoid variable errors and to make the test reliable. When a particular test is applied by the same tester to a given individual or to the members of the same group of children twice with some reasonable elapse of time, say two to four months, it is expected

that it will yield almost same results. If a test is applied to an individual or to a group of children on two or more occasions and the results obtained in all occasions do not differ at all or differ in a very little degree, we say that the test is a reliable test. Instead of repeating a single test we can use two alternative forms of the same test. If the scores obtained on different applications are consistent we can say that the test is a reliable test. Reliability of a mental test depends upon the degree of consistency with which it measures the mental traits of an individual or a group of individuals.

"When a test is reliable, scores made by the members of a group-upon retest with the same test or with alternate forms of the same test will differ very little or not at all from their original values." Garrett — P. 382₁. A reliable test is expected to be relatively free from chance errors. It is rather difficult to prepare a test which is cent per cent free from variable or chance errors. After constructing a test we generally try to ascertain with what degree of accuracy or consistency it measures the ability of our pupils. So reliability or consistency is a matter of degree. When a test yields almost same scores on two applications to the same group of children and it is considerably free from chance errors, we can call it a "Reliable Test". Scores obtained by applying such a test are more or less stable and trustworthy. In the case of such a test the amount of chance error will be very small or negligible. If the amount of chance error is small the reliability or consistency of the test will be high.

On the otherhand the scores obtained by an unreliable test will not be stable and trustworthy. A serviceable degree of reliability is an essential characteristic of a psychometric test.

3. Personal Errors

We should make our psychological test free from personal errors. A psychological test when applied to a particular individual or to a particular group of children by different individuals should always yield the same results. The test results may be

1. H. R. Garrett—Statistics in Psychology and Education—Longmans, Green & Co. New York. 1950.

vitiated by personal bias and idiosyncrasies of the examiner. Same examiner may give different marks to the same answer paper if examined at two different times. Such a situation may happen if the examiner is tired or bored or ill or his attention is distracted by some distracting factor. When an examiner is in a peaceful mind he will mark the answer paper in one way but if he is not in a peaceful mind he gives marks to the answer paper in another way. Other factors which may influence the mental process of the examiner are his personal feelings, likes and dislikes, favouritism for some children and prejudices. A psychological test should be guarded against personal errors. It must yield same scores whether it is administered by different persons or by the same person at different times on the same individual. If a test does so it is called an objective test.

So we can say that the third basic characteristic of a psychological test is its objectivity. As far as possible mental tests should be made objective.

4. Errors of Interpretation

Errors of interpretation may also influence the scores of mental measurement. Suppose two psychological tests are applied to the same group of individuals. In the first test the scores of three individuals, say A, B and C are 50, 85 and 100 respectively. In the second test the scores of A, B and C are 105, 110 and 125 respectively. It is very difficult to say how good is A in the first test on looking to his raw score of 50. We cannot say whether the value of the raw score of 105 of C in the first test is really double the score 50 of A. Again from the raw score of 105 of A in the second test we cannot say what is his standing in the second ability. We should determine some definite units of measurement in psychological tests. Some known and constant significance should be assigned to the units of measurement.

In order to enable an examiner to interpret properly the raw scores and to compare the score of an individual with the scores of his fellow individuals all psychological tests should be standardised. Norms are to be calculated so that the scores of a particular individual may be compared with the scores of others and his rank position within the group may be determined.

All tests should be accompanied by a "Test Manual" and a key showing the correct answers. Therefore standardisation is the fourth characteristic of a valid and reliable "Mental Test".

Determination of Validity Indices

Now our question is how to calculate the validity of a test.

Generally when an experimenter wants to construct a psychological test he begins with a working concept of the trait which he wants to measure. Very often he discusses the question thoroughly with some teachers and experts. Then he prepares some test items which he thinks will be able to reveal the traits most and seem to be relevant. After that he submits his test items to a group of teachers and experts for criticism and judgment. Some of the items may be dropped if they are not approved by the experts as to be relevant. Then all the approved items are to be selected to form the test.

Now the test is tried out on a group of pupils forming a random sample. In this first application the group of children should generally consist of more than a hundred children. Correlation of each of the items with the entire test may be calculated. Then those items which have high degrees of correlations with the whole test and discriminate students known to possess high abilities from those with low abilities are selected for the final test. This time the test items are arranged in order of difficulty levels and the total number of items are much more reduced than the original number of items.

The next thing is to select some valid standardised test which also measures the same traits. Now both the newly constructed test and the selected standardised test are applied to a group of children. The test scores of the group of children in the two tests are arranged into two frequency distributions. Product moment co-efficient of correlation of the two sets of scores is computed. This gives the value of the validity of the new test. The standardised test with whose scores the scores of the new test are compared is known as the criterion. In some cases it is not so easy to get a criterion. In such cases some other criteria are taken. So we see that there are three phases in the whole process.

(i) The working concept of the skill is to be tested.

Psychologists try to define clearly the working hypothesis while preparing a mental test. As for example, we can cite the case of the Binet's Intelligence Test. Binet thought that general intelligence has three important characteristics. These are the abilities to select and pursue "a definite direction in thinking," the power of adaptation to new situation in order to achieve a desired goal, and the "power of self-criticism" (Terman). When Thorndike prepared his I.E.R. Intelligence Scale CAVD he thought that there are four characteristics of intelligence. They may be described in the following way :—

A. "*Level or altitude*"

By the level or altitude of intelligence he understood the degree of difficulty with which a man can perform a particular mental task.

B. "*Area*"

The term area in an intelligence test means the number of problems of all levels of difficulty a man can solve. It takes into account the upper limit of achievement which a man is capable of reaching.

C. "*Range*"

By the term range he understood the total number of items a man can perform within a specified level of difficulty.

D. "*Speed*"

The term speed denotes the number of items answered correctly within a limited time.

(ii) The next step to be followed in the construction of a mental test is to prepare a large number of items or questions which the test maker thinks will measure the defined trait or skill of the subject. Items or stimuli should be prepared in such a way that it can elicit responses or answers which will correspond pretty well with the conceived idea of the particular trait which is to be evaluated or measured. Then the test maker refines and selects the items which seem to him to be good. Now he submits all his items to capable experts and teachers for proper scrutiny. In this way some items are selected tentatively. These

tentatively selected items are applied to a group of children of a certain age group for which age group the test is intended. Those items which give high correlation with the total score are selected. Those items which are correctly answered by almost all children and the items which could not be answered by any child are naturally eliminated. In many cases some external criteria, such as teacher's ratings, school records or some other existing standardised tests, measuring the same trait or skill, are used.

Another method which is frequently used by the modern psychologists for the construction and revision of test items is Factor Analysis. Though there are some limitations of factor analysis yet it is extensively used now-a-days.

(iii) It is essential to check up the newly constructed test by comparing it with some criteria. The following external criteria may be used for the purpose of test validation.

- (a) Some existing tests measuring the same trait.
- (b) Opinion of experts.
- (c) School Achievement Records.
- (d) Some special criteria such as Vocational or professional success may also be used for validation of the newly constructed mental tests.

Different other methods may be used for determining and establishing the validity of a newly constructed mental test. It should be remembered that in actual practice we generally depend on the wide and careful use of the new test for its validation.

Determining Reliability of Tests

When a mental test is repeatedly applied to a particular group of children and the scores obtained at different times remain almost same we may call the test a reliable test.

In order to find out the coefficient of reliability of a test we are to administer the test on a particular group of children twice with a short interval of time and to calculate the coefficient of correlation between the two sets of scores thus obtained. The obtained coefficient of correlation between the two sets of scores is the co-efficient of reliability of the test.

A. Reliability of a test depends, to some extent, on the number of items included in the test. If there is only a small number of items in a mental test it may not be highly reliable. A short test may not give a subject better chance to show his true ability. So it is better to increase the length of the test in order to make it more reliable. But it should not be taken for granted that the reliability will be doubled if the length of the test is doubled. We can calculate the reliability coefficient of an enlarged test by the following formula.

$$r_x = \frac{N_r}{1 + (N - 1)r}$$

where

r_x = Coefficient of reliability of the enlarged test.

r = Coefficient of reliability of the original test.

N = Number of times by which the length of the test has been increased.

B. If irrelevant and disturbing items are included in the test they will lower the reliability of the test.

C. Test items should cover a narrow range of difficulty. Items should be arranged in order of ascending difficulty. All items should be independent instead of being interdependent. The same question should not be put in different forms. In case of alternate responses or true-false items the experimenter should pay attention to avoiding guess work, and also to the element of choice.

D. Catch questions and emotionally loaded items may decrease the reliability of a test. Items concerning race problems or communal problems may vitiate the reliability of a test. Therefore such items should be avoided.

E. The mental set of the subject may also lower the reliability of a test. If the subject is in a jolly mood and willing to co-operate, the responses will be more reliable. Again if the contents of the test items are within the range of common knowledge of the subject then the reliability of the test will be increased.

F. Mental and physical condition of the test giver or administrator may also influence the reliability of a test. No

personal factor should influence the scoring of the test responses. Scoring should be accurate and free from any kind of prejudice. Now-a-days many psychologists are preferring machine-scoring. The man applying the test should be thoroughly conversant with the characteristics of the mental test. He should administer the test properly with a willing and co-operative attitude. He should establish due rapport with the pupils on whom he is going to apply the test at the very beginning.

When a test giver is fatigued or boared he may not be able to apply the test seriously and conscientiously. If the test is not properly administered the co-efficient of reliability of the test may be lowered.

The actual steps which should be followed in determining the co-efficient of reliability of a test are as follows :—

Generally psychologists determine the coefficient of reliability of a test by correlation methods i. e. by calculating the co-efficient of correlation between two sets of test scores under identical conditions. In the case of validity of a test we consider the agreement of the test scores with the scores on an outside criteria, whereas in the case of reliability we take into account the agreement between two sets of scores obtained either by the application of the same test twice or by the application of two equivalent forms of the same test.

There are three chief methods for determining the reliability of a test. They are as follows :—

- (1) Test-retest method or repetition method.
- (2) Alternate or parallel or Equivalent forms method.
(test and retest with equivalent forms)
- (3) Split-half method.

In addition to these three common methods there is another method known as "rational equivalence or Kuder-Richardson Method."

1. *Test-retest method.*

In this method the same test is applied on the same group of students or repeated on the same group of students giving some time interval between the two successive administrations of

the test. The co-efficient of correlation between the first and the second sets of scores thus obtained by two administrations is calculated. This co-efficient of correlation may be named as "co-efficient of stability." This method has its own limitations. If the time interval given between the two administrations of the test is very small, the pupils will be able to recall most of the responses made by them during the first administration. Transfer effect and memory effect may influence the scores in the second time. Again if the time interval is too long, the changes in the pupil's characteristics due to growth and maturity may vitiate the test scores. So the time interval between the two administrations should neither be too short nor too long.

2. *Alternate or Parallel or Equivalent-Forms Method.*

In this method two different but equivalent forms of the same test are applied to a group of children in close succession. The two forms of the same test may be named as 'Form A and Form B'. By the application of the two forms of the test two sets of scores are obtained. The co-efficient of correlation between these two sets of scores is calculated. This coefficient of correlation may be named as self-correlation or co-efficient of stability and equivalence. In this method also, proper precautions should be adopted in order to avoid the influence of memory and practice.

But it is very difficult to prepare two tests whose items are equivalent. The items of the two forms should be equivalent in content, difficulty and in nature. Again they should not be too much alike.

3. *Split-half Method.*

By the Split-half method the reliability of a test is calculated by applying a single form of a test on a group of children for one time only. In this method the test is divided (rather the test scores) into two halves. Generally the even-numbered items and the odd-numbered items of the test are grouped into two halves and they become almost equivalent. After application of the test the test scores of the two halves are written in two separate columns. Thus two scores for each student are obtained.

By calculating the co-efficient of correlation between the two sets of scores of these half-tests we get the reliability of the half of the test. The reliability co-efficient of the whole test may be calculated by using the Spearman—Brown Formula stated below.

$$r_{11} = \frac{2r_{\frac{1}{2} \cdot \frac{1}{2}}}{1 + r_{\frac{1}{2} \cdot \frac{1}{2}}}$$

Where

r_{11} = Coefficient of reliability of the whole test.

$r_{\frac{1}{2} \cdot \frac{1}{2}}$ = Correlation between the two halves of the test or the reliability co-efficient of one-half of the test.

Spearman-Brown formula may be written in the following way also.

$$\text{Reliability of the whole test} = \frac{2 \times \text{reliability on } \frac{1}{2} \text{ test.}}{1 + \text{reliability on } \frac{1}{2} \text{ test.}}$$

We are to correlate the two half-scores and then substitute this correlation coefficient in the Spearman-Brown formula for the double length.

This method is very frequently used by the test makers. Spearman-Brown's formula may be used in ratings and judgment scales also. The coefficient of reliability is a quantitative measure and high item reliability is desirable. So this method is preferred by most of the test makers.

In some tests, such as, in some ability tests, a reliability coefficient of .50 or .60 will serve ordinary purposes but in tests intended to measure intelligence or achievement it should be about .80 or .90. According to some psychologists split-half method is the best method of calculating reliability coefficient.

4. *Kuder-Richardson Method.*

In the fourth method which has been devised by Kuder and Richardson a single administration of the test is required. Kuder and Richardson developed some formulas for determining reliability co-efficient of psychological tests. In this method there is no need for splitting the test items into two parts. Reliability co-efficient can be calculated by the Kuder-Richardson formula which is as follows :

$$r_{11} = \frac{N}{(N-1)} \times \frac{\sigma^2 - \Sigma pq}{\sigma^2}$$

where

r_{11} = reliability co-efficient of the whole test.

σ = Standard Deviation of the test scores.

N = Number of test items included in the test.

p = Proportion of the group of subjects answering a particular test item correctly.

$q = (1 - p)$ = Proportion of the group of subjects answering a particular test item incorrectly.

One should calculate p and q for each test item. Then multiply p and q of each test item to get $p q$ for each item. Now sum up all $p q$ s in order to calculate Σpq .

Again a less accurate reliability coefficient can be calculated by using the Kuder-Richardson's formula number 21 as stated below :

Where

$$\text{Reliability coefficient} = \frac{N}{N-1} \left\{ 1 - \frac{M(N-M)}{N\sigma^2} \right\}$$

N = Number of items included in the test.

M = Arithmetic Mean of the test scores.

σ = Standard Deviation of the test scores.

There are a few other methods for calculating reliability co-efficient of tests. We can name here the Hoyt's Analysis of Variance Method.

Objectivity

A psychological test is said to be an objective test if same scores or results are obtained by administering the test to a particular group of pupils on different occasions and scored either by the same scorer or different scorer. In objective type tests the resulting scores are in no way influenced by the mental condition, physical condition, judgment, personal bias or feelings of the scorer. Items of objective tests are prepared in such a way that there will be only one (single) correct or right response to each item. Scoring should not be influenced by any "personal equation" of the scorer. Whoever may administer or score a mental test on a group of children the test scores will

always tend to be the same. This characteristic of a psychological test is said to be the objectivity of the test.

Objectivity is an essential characteristic of the most standardised ability tests and achievement tests. The correct or right responses are predetermined by the test maker. But such predetermination of right responses may not be easy to make in tests which intend to estimate a person's personality traits, the emotional organisations, temperaments or trustworthiness. Responses in such tests may be interpreted in different ways. So a few judges are requested to evaluate a single response. A test maker is to ascertain the extent of agreement amongst the evaluations made by different judges. In this way psychologists try to make different types of psychological tests objective.

In many cases test makers prepare a scoring key or a scoring stencil in order to eliminate several factors which tend to reduce the objectivity of psychometric tests.

Now-a-days the system of machine scoring has been introduced in some places in order to make a test more objective.

In essay type tests it may not be possible to predetermine a single right response. Essay type tests, however, may be made more objective by careful phrasing of the language of the questions and by preparing "a standard set" of scoring rules. Generally the objectivity of a mental test increases its reliability.

Usability

A psychological test should be beneficial, advantageous, convenient to use from the point of administration and scoring, easy to interpret and less costly. Usability comprises all these abovementioned items or requirements.

Ease of administration is an essential characteristic of a mental test. While preparing a test, a test maker should give detailed and clear directions about the administration of the test. If a test is not properly administered its validity and reliability will be vitiated. Another important thing to be noted is the time to be allowed to the pupils for answering the test. If too much time is allowed the reliability of the test scores will be reduced. Again if too little time is allowed the pupils will not

be able to answer even those questions which they are able to answer correctly. In standardised tests, generally, the time allowed varies from 20 to 60 minutes.

Then comes the question of the method to be adopted in scoring the test items. It is better to supply a clear and simple scoring key with every test. Scoring device should be made as far as possible objective. It has been found convenient to use separate answer sheets for recording answers. There are many psychologists who favour machine scoring.

A scoring key can be prepared by marking the predetermined and correct answers on an original copy of the test. The most convenient system is to prepare a scoring stencil which again can be prepared by punching holes in a blank copy of the test.

In psychological tests the common practice is to give full credit or full marks for each individual item answered correctly.

In Multiple Choice test items credit is given only when the subject indicates the correct answer. Pupils are asked to answer as many items as they can, within the stipulated time, correctly. They are directed to pass on to the next item if they cannot answer a particular item. Generally one mark is given for each item answered correctly. In order to get more marks pupils try to guess the correct answer when they are not sure of the correct answer or are not able to answer any more items. There are some psychologists who are of the opinion that such pupils should be penalised if they answer incorrectly or guess incorrect answer.

Some psychologists suggested that corrections for guessing may be made by the following formula.

$$\text{Score} = \text{Right} - \frac{\text{Wrong}}{n-1}$$

Here 'n' indicates the number of alternative answers suggested in an item.

In a true-false test item the correction for guessing will be like the following:

$$\text{Score} = R - \frac{W}{2-1} \text{ or } S = R - W$$

So in different cases of Multiple choice items correction for guessing will be like the following.

Where there are—

$$(i) \text{ Three alternatives } S = R - \frac{W}{2}$$

$$(ii) \text{ Four alternatives } S = R - \frac{W}{3}$$

$$(iii) \text{ Five alternatives } S = R - \frac{W}{4}$$

If an experimenter wants to use these formulas he will have to count both the correct and incorrect answers.

A large number of psychologists are not in favour of making any correction for guessing. They hold the view that except in speed tests there is no need for any correction for guessing. According to them it is not so easy to ascertain which pupil has made wrong guessing. So it is convenient to ignore guessing. But we should always discourage guessing while we ask our pupils to answer psychological tests.

There should be duly audited test manuals or test guides in order to enable a test user to interpret the raw test scores with ease. Interpretation of raw test scores in a correct way is very important. If test scores are wrongly interpreted it will be useless, if not harmful, to use such a test in solving educational problems. A table of norms should be supplied so that the raw scores can be converted into some meaningful scores and individual scores can be compared with others.

Too much money should not be spent for preparing a psychological test. But it should be remembered that if we want to standardise a test after applying it on a big population we will have to incur some expenditure. One can economise some expenditure by using separate answer slips and by introducing the system of machine scoring.

Item Analysis

A psychological or mental test consists of a number of separate items. Each of these items intends to reveal and measure a subject's abilities, skills, attitudes or achievement in different fields of knowledges and abilities. When a subject answers

correctly an item or question he is said to have achieved a definite score. When a full test is administered we add all the scores achieved by the subject by answering individual items and thereby get the total scores obtained in the test. The tests should be effective. Effectiveness of a test depends upon the effectiveness of the individual items. After preliminary application of the test the tester should examine and interpret the scores of the subjects in order to ascertain the defective and undesirable items.

In preparing a psychological test the pupil's responses to individual items should be analysed in order to ascertain the effectiveness of the items. This process which is known as item analysis is necessary for test construction.

Item analysis will tell us how difficult is the item, to what degree it discriminates the high achievers from the low achievers and how effective are the distracters. Distracters are the alternative responses or suggested incorrect solutions of problems (Items) which are presented to the pupil in addition to the correct response or the correct answer. On the basis of item analysis test items are modified, revised and the defective items are eliminated.

Item analysis helps a teacher a good deal. If an item is found to be too easy and all pupils can answer it correctly the teacher can safely omit the item. If it is found to be too difficult then the teacher should give more emphasis to that area of knowledge.

Item analysis helps the teacher to know the areas of weakness of his pupils in a particular branch of studies. It enables the teacher to take remedial measures also.

Tests may be prepared to measure learning outcomes of pupils and the desirability of the prescribed syllabus. Results of item analysis will indicate whether the contents of the syllabus is beyond the capacities of the pupils or the method of instruction adopted by the teacher is suitable for the particular group of pupils. So on the basis of the results of item analysis the existing curriculum or the method of teaching may be revised.

Therefore item analysis is very important for the construction of a good psychological test. Item analysis will show ineffective and ambiguous items, bad distracters and several other defects which may turn the test into an ineffective test. It helps the test maker to revise his test items for future use.

Actual steps to be followed in Item Analysis

After the first application of the newly constructed test ; scores of the students are ranked in order of merit or values. Students ranking in the upper and lower thirds are compared statistically in order to determine the difficulty and the discriminating power of each item. It is taken for granted that the scores of the middle group of students will follow the trends of the upper and lower thirds. According to convenience the upper and lower quarters or the upper and lower halves can also be used.

Suppose we have applied a test on a group of 62 children. We are to follow the following steps when our test item is a Multiple choice item having four distracters.

(1) Rank the answer papers in order of merit, the highest scores being given the highest position.

(2) Group answer papers of the upper thirds i.e., answer papers of 20 top scorers in one group and the lower thirds comprising the 20 lowest scores in another group.

(3) Tabulate the students' responses to a particular item in a table as shown in Table A.

(4) Calculate the difficulty value of the item by using the formula.

$$\text{Difficulty} = \frac{R}{T} \times 100.$$

(5) Calculate the discriminating power of the item by using the formula.

$$\text{Discriminating Power} = \frac{R_u - R_l}{\frac{1}{2}T}$$

(6) Last of all determine the effectiveness of the distracters.

TABLE A.

Test Item.

- (i) We read newspaper because... ..
- Which one of the following statements will be the best answer.
- (a) it helps us in the process of emotional adjustment.
 - (b) we are motivated to read newspaper.
 - (c) it gives us news of the whole world.
 - (d) all grown up people read newspapers.

ITEM ANALYSIS.

Alternatives	a	b	c	d
Upper 20 students	0	0	20	0
Lower 20 students	2	5	8	5

Here c is taken to be the correct response.

Difficulty of the item = 70%

Discriminating power of the item = .60

Item Difficulty.

Item Difficulty purports to say the "percentage of pupils who get the item right". It can be calculated from the percentage of pupils who answered the item correctly. We have already mentioned that the formula for determining difficulty of an item is as the following.

$$\text{Difficulty} = \frac{R}{T} \times 100$$

Where

R = Number of right answers or the number of pupils who answered the item correctly.

T = Number of pupils who attempted the item.

In this particular case we have

$$\text{Difficulty} = \frac{28}{40} \times 100 = 70\%.$$

Here we see that the difficulty level is not very high, on the contrary it can be said to be fairly low. A bit higher difficulty level of the item would be better.

Discriminating Power of the Item

By the term discriminating power of an item we mean the

“degree to which it discriminates between pupils with high and low achievement.” A valid item will always discriminate in a positive direction. It is expected that a larger number of pupils in the upper group will answer the item correctly than the pupils of the lower group. The formula for determining discriminating power of an item is as follows :—

$$\text{Discriminating Power} = \frac{R_u - R_l}{\frac{1}{2}T}$$

Where

R_u = number of pupils in the upper group who answered the item correctly.

R_l = number of pupils in the lower group who answered the item correctly.

$\frac{1}{2}T$ = One half of the total number of boys, from both groups, who attempted the item.

In our example we have

$$\text{Discriminating Power} = \frac{20 - 8}{20} = \frac{12}{20} = .60.$$

Here the discriminating power can be said to be an average one.

If all the pupils of the upper group can answer the item correctly and no pupil of the lower group can answer the item correctly we get an item with the highest discriminating power. Then our result would be like the following.

$$\text{Discriminating Power} = \frac{20 - 0}{20} = 1$$

An item with negative or no discriminating power should naturally be discarded. Such a case may happen if equal number of students in both the upper and lower groups can answer the item correctly.

$$\text{Discriminating Power} = \frac{20 - 20}{20} = .00$$

Effectiveness of Distracters

Simple inspection of the different responses of pupils and drawing up some conclusions from them may serve our purpose. We need not actually calculate any mathematical value of the ineffectiveness of distracters. Ambiguous distracters and distracters presented in two different languages carrying same meaning may be replaced.

A distracter which attracts more pupils of the lower group is said to be a good distracter. Suppose the same item is applied to another group of 62 pupils and their responses are tabulated in the following way.

Alternatives	A	B	C	D
Upper 20 students	0	5	10	5
Lower 20 students	0	5	3	12

Here C is the correct answer.

The distracter B attracted equal number of students from the both groups so it is a poor distracter. The distracter A attracted none, so it is an ineffective distracter. The distracter D attracted more students from the lower group so it is a good distracter. The discriminating power of an item may be increased by changing the distracters.

Test File

Before preparing the final test we are to prepare a large number of effective test items and keep them in a file. At the time of modification and revision of test items the test maker will be able to choose some test items from his test file.

Standardisation of Test

After following all necessary steps and determining all the qualities of a psychological test which we have so far discussed we are to find out the norms for the proper interpretation of the raw scores. Establishment of norms, which is generally thought of to be the last step of test construction, means the process of standardisation of the test.

One can prepare an intelligence test and may collect some raw scores by applying the test on a group of boys. But his scores will carry no meaning unless he can compare these scores with the norms.

In standardising a mental test it is necessary to apply the test on a large number of subjects similar to those for whom the new test is meant. The standard or norm is calculated from the scores of this application of the test. Ordinarily norm means the representative score or the average score of the whole

population belonging to the same class or age with which the score of the individual subject is compared. There are some psychologists who think that the Central Tendency or the Arithmetic Mean of the scores of the specified group may be regarded as the norm. In order to determine the norm of boys of a particular age it would be better if we could apply the test to all boys of the world of that age. But it is not possible. We are to remain satisfied with a random sample. So we are to standardise our test by administering the test to representative groups of children (pupils) for whom we want to prepare the test.

Derived Scores

For our ordinary class-room purpose we can use raw scores but we cannot scientifically interpret them.

Again we cannot compare the raw scores obtained by administering two tests on the same group of pupils. In this case we will have to convert the old scores into new scores having fairly uniform meaning. We can compare the achievements of a pupil on two different tests by converting his raw scores into some "Derived Scores" or new forms.

"A derived score is a numerical report of test performance in terms of the pupil's relative position in a clearly defined reference group." For interpreting the performance of particular pupil on a standardised test we are to compare his derived score with the table of norms.

Different Types of Norms

There are a few types of test norms which are most commonly used. They may be classified in the following way :—

NORMS

1. Grade Norms
2. Age Norms
3. Percentile Norms
4. Standard Score Norms.

RELEVANT DERIVED SCORE

- Grade equivalents.
 Age equivalents.
 Percentile Ranks,
 Percentile Score.
 Standard Scores, Z-Scores,
 T-Scores, Deviation I.Q.,
 Stanines.

There may be norms for sex, race, social groups, and local norms. Different types of norms are useful in different situations.

EXERCISES

1. Summarise the important developments in the field of measurement of mental ability. C.M.C. 1963.

2. Discuss how you would construct an objective test in any school subject. Mention a few test items. C.M.C. 1963.

3. Suggest some measures that may be taken to secure standardisation of a psychological test for use in a school programme.

Or,

Indicate the steps which may be taken in preparing an ad hoc objective attainment test in any school subject. C.M.C. 1964.

4. What should we know of a test before we plan to use it in our schools? Explain these requirements as clearly as possible. C.M.C. 1964.

5. Indicate briefly the steps to be taken in constructing and standardising an achievement test in Arithmetic or English for pupils of class VI. C.M.C. 1966 W.B.

6. Describe how an achievement test in Mathematics or Bengali can be constructed and standardised. C.M.C. 1968. W.B.

7. Indicate the technique you would follow in constructing a good achievement test in a school subject. C.M.C. 1969. W.B.

8. Write short notes on any three of the following :—

- a. Item Analysis ;
- b. Interest Inventories ;
- c. Reliability of a test ; and
- d. Validity of an achievement test. C.M.C. 1967.
- e. Types of "norms" and their meanings.
- f. Rating scale.

9. What are Standard Scores and T. Scores ? How are they more useful than raw scores ? C.M.C. 1967. W.B.

CHAPTER XXI

HOBBIES AND HOBBY CLUBS

Hobbies and their Utilities—Hobby Clubs In Schools—Schools' Hobby Club Committee—Rooms for Organising Hobby Clubs and Equipment—Time for Organising Hobby Clubs—The Role of Parents—Some Suggested Activities of Hobby Clubs—Different Hobby Clubs—Some of the Difficulties in Organising Hobby Clubs.

Hobbies And Their Utilities

In addition to normal working habits and inclinations each and every student may have some soul-stirring and favourite objects of pursuit or side-occupation in which he indulges at his leisure time not for any material profit but for his personal mental and bodily satisfaction. These favourite objects of pursuit or side-occupations are known as his hobbies.

Different types of hobbies, such as, gardening, coin-collecting, stamp-collecting, reading of folk tales, fables and myths etc. are noticed amongst students. Hobbies are of so absorbing an interest that a student, even if he is too tired from his routine studies, will not abstain from them. A large number modern educationists think that students should engage themselves in some hobbies or side-occupations during their leisure time. Leisure hours should not be thrown away by simply doing nothing, because an empty brain may turn into a devil's workshop. If students have nothing to do during their leisure time they will idle away their time in card playing, scandal mongering and in other types of worse pleasures.

In regular classes our students are to observe some rules, regulations, conventions and formalities. But when they indulge themselves in their hobbies they are a bit free to act according to their own will and get a chance for self-expression. Such activities will create a sense of self-reliance in them and will make them courageous enough to undertake the responsibility of doing a work independently in the future. This will ensure a pupil's well-balanced mental and physical growth. Ultimately all his personality traits will be developed and enriched in a desired way.

Hobbies or side-occupations will break the monotony of daily class routines and will help them to work in pursuance of their imaginations and dreams. Through hobby activities pupils may try to verify their own ideas, to create some new things or can put their theoretical class room learnings into practice. If they are successful in their experimentation they will get encouragement, mental satisfaction and develop an inventive attitude. New knowledge gathered through such activities will be ingrained in the core of their minds. It is also claimed that hobby activities expedite intellectual maturity, ensure emotional stability, make pupils more sociable and create a favourable attitude towards the moral and spiritual values of life. On the other hand if they are unsuccessful they will try to adjust themselves to the realities of the environmental situation by sublimating or redirecting their mode of behaviour.

Hobby activities are useful to the guidance programme also. By observing the hobby activities of a pupil it is possible to get some idea about the nature of the innate abilities and other capacities of a pupil. It is also possible to identify his interests and personality traits to some extent from his actual performance.

In a hobby club a student gets the chance of mixing and working with other fellow students. His ability to co-operate with others in a group can be easily noticed in hobby clubs. So a counsellor will be able to get some idea about the social maturity of a student by observing his "at-homeness in group situations."

Again a student's emotional maturity can be gauged to some extent by noticing his reaction to conditions that are unpleasant to him, his ability to sacrifice immediate gains for future gains and his willingness to consider the legitimate rights of others.

There may be some students who show signs of fear, anxiety, belligerence and withdrawal. Hobby clubs may help such students to develop a sense of self-confidence in himself and in the teacher.

Hobby Clubs in schools

As our schools aim at the natural and proper development

of students they should utilise the hobby activities of students as far as possible. Instead of allowing students to pursue their hobby activities in an haphazard or unguided way our schools should provide some leisure-time activities, of course with less official control and rigidity. Therefore our schools should organise hobby clubs for students. Separate hobby clubs can be organised for the students of the different streams of Multipurpose Schools.

The school authorities should encourage their students to join such hobby clubs during their leisure hours, after-school hours or on certain holidays and half-holidays. The environment of the hobby club should be so manipulated that a student should feel that the hobby club is a place of magic, relaxation, enchantment and relief. The whole atmosphere of the hobby club should enable a student to see the wonder and the beauty in the "Commonplace" world all around him.

The Classroom teacher and the school counsellor should help their students to organise such hobby clubs.

Our schools should organise different hobby clubs and encourage students to join one of those clubs according to their own choice. A Multipurpose school may organise separate hobby clubs for the different streams or courses of studies provided by it. So there may be separate hobby clubs for the Science Stream, the Humanities Stream, The Commerce Stream, The Technical Stream and so on.

There may be provision for some prizes and scholarships for very good performances in hobby clubs.

As a Guidance Officer will have to render guidance service to his students at the end of class VIII he will have to observe his students for a considerable period of time and try to ascertain their interest pattern and other abilities through their activities in hobby clubs. So students of classes VI, VII and VIII of Higher Secondary Schools should be asked to join one of those hobby clubs. Students of classes IX, X and XI may also participate in hobby clubs if it is found desirable by the school authorities.

If senior students join hobby clubs they will be able to apply their theoretical knowledge into practice, verify it through experimentation and increase their original knowledge. Their participation will facilitate future guidance work too. Many valuable information can be collected about the students from their activities in hobby clubs while preparing individual Cumulative Record Card and Guidance Schedule.

Schools' Hobby Club Committee

There should be one School Hobby Club Committee and several Sub-Committees for separate or subjectwise Hobby Clubs in the school. The Headmaster will be the ex-officio President of all these committees. The School Counsellor will act as the convenor of the School Hobby Club Committee and a member of all the Sub-committees. All the Heads of the Departments of different subjects will be members of the School Hobby Club Committee. The School Psychologist, the Physician, a few parents should also be taken in as members of the School Hobby Club Committee.

All the subject teachers of a particular subject will be members of respective sub-committees. Teachers of an individual stream will conduct the hobby club of that stream under the direct supervision of the Head of the Department. Subject teachers will again select one or two students as secretary and convenor of the sub-committee and make them responsible for the smooth running of the particular hobby club.

The Headmaster will request the Managing Committee of the School to provide necessary funds for the organisation of these clubs.

Rooms For Organising Hobby Clubs And Equipment

Hobby clubs should be set up in an attractive surrounding because that will encourage students to do more work. It will be an ideal condition if separate rooms can be provided for holding separate hobby clubs in the school premises. But in a country like ours this is almost beyond imagination. So we may have to use our Library room, Science Laboratories, Students' Common Room, Geography room and vacant class rooms for this purpose.

In every room where a hobby club will be organised there should be an almirah for keeping hobby materials and other accessories, a few movable tables, a few comfortable chairs, sufficient bookshelve space, a bulletin board, a book or model display table, good lighting arrangements, water and heating arrangements in the Science Hobby Club and a few books and journals and other materials. If there be no separate and permanent room for the hobby club all materials may be kept in the almirah when the work of the club is finished.

There should be a few audio-visual aids, such as, films, slides, pictures, phonograph records, a radio set and a television set if possible.

Time For Organising Hobby Clubs

Hobby club classes may be held once or twice a week. Saturday afternoons, Sundays, holidays or any other suitable day may be utilised for this purpose. One to two hours time may be devoted for a single hobby club class. Altogether a student may have to spend about 6 to 7 hours per week in hobby club activities.

Hobby clubs can be organised throughout the whole year except during long vacations. Again such classes should be temporarily withheld about a month before all terminal examinations and the annual examination of the school.

The Role of Parents

In a school-wide Hobby Club Programme active co-operation of parents is essential. Sincere and careful consideration should be given to parents' wishes and aspirations. Parents have a right to know what the school's objectives in hobby clubs are. The school authorities will be much benefited through the intelligence, long experiences and good judgment of parents.

Both the school and home have a common interest as regards the education of children. The school needs the help of home to a great extent. Unless parents make the home environment favourable to the proper development of the child it will not be possible on the part of a school to educate the child properly. Parents remain in touch with the child for the greater part of the day so

they are in a better position to notice a child's interest pattern and to perceive his emotional reactions towards various things. Parents will have to supply different types of books, express their love and encouragement, make provision for a variety of games, creative activities and experiences so that the child may feel secure and happy at home. Parents can help in creating interest of their child in things in which the child should be interested by occasional praise and developing feelings of independence and responsibility in the child.

It has already been said that a few parents should be taken in the School Hobby Club Committee for future planning and running of hobby clubs. Parents are generally concerned with the progress of their children in schools. So they should always be consulted and informed of the activities carried on in hobby clubs. Some of the parents may help hobby club activities by supplying different necessary materials.

Schools should publish newsletters written by teachers and illustrated leaflets describing students' activities and send them to parents regularly. Parents may occasionally be invited to visit the activities of the school's hobby club and requested to give their suggestions for improvement. If any interesting project is undertaken by any hobby club it should be shown and explained to parents.

Another method of communicating news to parents is parent-teacher conference. Certain days should be set aside for holding parent-teacher conferences. Such conferences may be held in afternoons in the school auditorium for a number of times every year.

The Headmaster, all subject teachers and the school counsellor will have to participate in these conferences. Different class teachers should talk individually with the parents of the students reading in their respective classes. A teacher will try to discover the view-points of the parents and their ideas about the abilities and needs of individual students. A teacher will be able to collect valuable information about the interest patterns and personality traits of students from their parents in such conferences.

At the same time a teacher will have to give his report about the progress that the students are making in the school. They should give answers to parents' questions about the method of instructions followed in the school.

On the otherhand parents should come to the school with open mind and should not be too critical of the programme of work of the school. They should realise that they are equal partners in the whole enterprise.

Some Suggested Activities of hobby clubs.

Following activities can be performed in the different hobby clubs.

- (1) Projects. Different group or individual projects suitable for the interests of students and demands of the course of study for which the hobby club has been established can be undertaken. Monographs and bulletins can also be published by individual hobby clubs,
- (2) Essay Reading. A few students may write some popular essays and may be allowed to read those essays in the club.
- (3) Dramas and Role-plays can be organised by students.
- (4) Debates, Seminars and Film shows can be arranged from time to time.
- (5) Nature Corner and Meseum. Students can prepare Nature Corners and Meseums by collecting different exhibits from various sources.
- (6) Exhibitions. Different hobby clubs can organise their annual exhibitions. Students will themselves prepare several models, charts and posters for demonstration with the help of the teacher guiding the hobby club. Students can collect Newspaper cuttings and other exhibits from various other sources.
- (7) Recreational Activities. Recreational programmes can be arranged by the hobby clubs occasionally. Parents and teachers may be invited to attend those functions.

Different Hobby Clubs

It has already been said that there may be several hobby clubs in the school, such as, the Science Hobby Club, Technical

Hobby Club, Humanities Club, Agricultural Club, Fine Arts Club and so on.

In the Science Hobby Club several scientific apparatus which are commonly used by students in their practical classes may be studied thoroughly. Parts of the original apparatus may be disassembled and reassembled for understanding the mechanisms and principles of their construction. Students may try to devise and design different new instruments or improvised apparatus for performing experiments. Students can prepare models of gas plants and refractories also. They can try to prepare simpler, less costly and more efficient instruments. The teacher-guide may help students in preparing scientific apparatus, such as, electromagnets, telescopes, telephone set with electric cell, radio set or transistors with dry cell, Burglars alarm, a gold-leaf electroscope etc. in the Physics Section.

In the Biology Section students can prepare models of protozoa, the skeleton of a frog, the human brain and so on. They can prepare preserving mixtures in several glass bottles for preserving different types of insects, reptiles etc. for future demonstration.

In the Chemistry Section students can try to prepare phenyl, soap, snow, face powder, fountainpen ink, boot-polish, aniline and aniline dyes etc.

The Science Hobby Club may organise seminars and conferences for discussing several scientific problems.

In the Technical Hobby Club students may disassemble and reassemble different instruments, such as, electric heaters, automatic locks, calling bells etc. and may try to understand their construction and working principles. Here also they may try to prepare some indigenous machines and instruments with locally available cheap materials.

Students of this hobby club may prepare some models of hydro-electric power plant or any river barrage project.

Technical Hobby Clubs will make students more practically minded and give them more opportunity for manifesting their skill in handwork.

In addition to these activities this hobby club can arrange popular lectures by some eminent scholars on topics on technological interest.

The Humanities Hobby Club will provide to participating students chances for self-expression. The Humanities Hobby Club may undertake several literary and cultural programmes. It can arrange essay writing, recitation and debating competitions. This hobby club may also undertake programmes for improving listening, stimulating growth in language abilities, learning to write, improving the speaking and understanding vocabulary, stimulating growth in critical thinking and in preparing experience charts. Retarded readers may be given special attention and help in this hobby club to get rid of their troubles.

Film shows, dramatic performances and several other recreational functions can be arranged by the members of this hobby club.

The teacher-guide may develop students' interest in poetry in the Humanities Hobby Club. The students of this hobby club may prepare Scrap-Books also.

The teacher-guide may take his students on educational excursions to different places.

In this way other hobby clubs; such as, Fine Arts Hobby Club and Agricultural Hobby Club can be organised.

Some of the Difficulties in organising Hobby Clubs.

1. Sufficient money will be required for purchasing necessary materials for organising hobby clubs. Most of our schools are not in a position to provide sufficient funds for this purpose.
2. Enough time cannot be devoted to hobby clubs owing to the heavy syllabus. A large number of parents and teachers think that much time of our students will be wasted if they are to participate in hobby club activities. Parents should be oriented and their attitude should be changed.
3. Our secondary school curriculum is still examination oriented. Students may not like to join hobby clubs

because in the present curriculum there is no provision for reward for hobby activities. However, students should be motivated to join hobby clubs.

4. Sufficient number of trained teachers, who are able to ascertain interest patterns and other propensities of students through their activities in hobby clubs are not available. Again the teachers are reluctant to take hobby classes because they do not get any additional remuneration and off-periods for conducting hobby clubs.
5. Sufficient accommodation or vacant rooms may not be available in our school buildings for holding hobby clubs.
6. Owing to want of funds our schools cannot take their students on educational excursions.
7. Most of the students want to enter into the Science Stream. They will try to join the Science Hobby Club with the hope that it will ultimately enable them to be selected for the Science Stream. No body will join the Humanities Hobby Club because they may think that such a choice will rather disqualify them from entering into the Science Stream in future. Therefore all students should be told beforehand that mere joining the Science Hobby Club will not entitle them to a sure entry into the Science Stream and joining in the Humanities Hobby Club will not be regarded as a set back to their entry into the Science Stream.

EXERCISES

1. What is a Hobby Club? How would you conduct a Hobby Club for your students interested in science? C.M.C. 1965. W.B.
 2. What is the purpose for developing Hobby Club in a school, as an integral Part of school guidance work? Give a concrete scheme for the organisation of the Hobby club in a Multilateral School. B.T. 1966. C.U.
 3. How would you organise a hobby club in a secondary school and why? C.M.C. 1967. W.B.
 4. What do you understand by Hobby Club? How should hobby clubs be set up in schools and what should be their functions? B.T. 1968. C.U.
 5. What is the utility of Hobby Clubs? How can Hobby Clubs be organized at the secondary stage? C.M.C. 1969. W.B.
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